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CONTENTS: CLASSIFICATION OF PATIENTS FOR WORK IN A TUBERCULOSIS SANATORIUM.

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Public health is purchasable. Within natural limitations a community can determine its own death rate.

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CLASSIFICATION OF PATIENTS FOR WORK IN A TUBERCULOSIS SANATORIUM.*

By WILLIAM T. CANNON, M. D.,

Bureau of Hospitals.

The many workers in the tuberculosis field have differed greatly in regard to the amount of exercise they considered proper for the patient to take. The more radical have advocated laborious work, such as road building, masonry, and ditch digging, while at the other extreme are those who are strong advocates of the rest treatment, with the addition of calesthenics and walking for exercise.

Recognizing physical exercise as a therapeutic measure, patients at the Municipal Sanatorium are expected to perform a sufficient amount of work to insure physiological reaction on the part of the various tissues (skin, glands, muscles, etc.) which, if left dormant for a considerable time, would, through their failure to functionate, retard the patient's recovery. The tasks assigned are shown in the appended charts. Every assignment made is under the direct supervision of a Hospital Physician who sees each patient daily. The whole question of work assignment in the Sanatorium is secondary to the medical direction of the care of the patients. Work is assigned always as a therapeutic measure. It will be seen by referring to the charts, that in many instances the work assignment is nothing more or less than an expedient, used to divert the thoughts of the patient from his physical condition to other things. Recently, the literature of tuberculosis has been enriched by such terms as vocational therapy, graduated exercises, rehabilitation, occupational therapy, reconstruction, vocational education, vocational training, etc.; all of which simply mean that the tuberculosis patient is expected to do some form of work.

The policy pursued at the Municipal Sanatorium since it was opened in 1906 has been one of graduated exercise in the form of work, the amount and character of the latter depending on the condition of the patient.

*This paper was written as the result of experience obtained while Physician-in-Charge of the Municipal Sanatorium of the City of New York, Otisville, Orange Co., New York.

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The theory upon which this system is based is:

1st. Most patients are benefited by a certain amount of exercise in the form of work, because it tends to keep the various organs of the body functionating in a proper manner.

2d. It keeps the mind occupied, and thus prevents patients from thinking of the condition of their lungs.

3d. The fact that patients are able to work tends to give them a contented spirit, which is an essential factor in the treatment of tuberculosis.

Patients at the Municipal Sanatorium are expected to do from two to four hours' work daily, always providing their physical condition permits; the amount depending on the judgment of the Resident Physician. If they perform four hours' work, it is so arranged that they do two hours in the morning and two in the afternoon. This work consists of the various activities necessary to the conduct of the Sanatorium. The tasks assigned them will be shown in detail later in chart form. In this connection, it should be mentioned that, with few exceptions, the class of patients received at this sanatorium are those who are dependent upon manual labor for a livelihood.

When an employee's condition improves to such an extent that he feels able to take a paid position, he makes application to the Resident Physician who examines him, and if, in the latter's opinion, the patient is physically fit, he puts his name on his list of applicants for paid positions. When a vacancy occurs, the Resident Physician submits this list to the Physician-in-Charge, who looks up the history of each applicant, on Chart No. 4, and makes his choice accordingly.

The advantages derived by patients having paid positions are:

1st. His economic rehabilitation before his return home, the idea being to pay a nominal salary, which enables the patient to supply his various needs while at the Sanatorium. If he works long enough, he should have a surplus remaining which will support him on his return to the city until he is able to secure the kind of employment he is best suited for. He would otherwise be compelled to take the first position offered, owing to urgent need of funds.

2d. The fact that he has been working during his stay at the Sanatorium will make it infinitely easier for him to take up his work, on his return to the city, than it would otherwise have been if he had spent all his time in resting, and in addition, the weight he has gained will be much more apt to remain with him.

The advantage the Sanatorium derives from its patient employees is one of economy, as it is enabled to avail itself of labor at very much less cost than if regular city employees were used, thus reducing running expenses by thousands of dollars a year.

When patients are admitted to the Sanatorium they are expected to rest for the first sixteen days, during which time those who do not develop elevation of temperature, rapid pulse or other adverse symptoms, make their own beds, and during the second week do light shack work. On the eleventh day they begin their daily walks, accompanied by a walking captain. These walks are 10 minutes in duration, morning and afternoon, on the first day, and increase 10 minutes each day, until they walk one hour morning and afternoon. On the sixteenth day, at the completion of their afternoon's walk of one hour, they are inspected by the resident physicians, who take note of how they react to it in regard to pallor, rapid pulse, dyspnoea, etc.

During their stay in the reception shacks, the resident physicians have an excellent opportunity to observe the patients and become thoroughly familiar not only with their physical condition, but also their temperament, which helps greatly in making work and shack assignments.

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The frequent changes in the staff personnel, which was much depleted during the period of the war, in addition to the handicap of a falling census and the admission of a poorer type of case, made it necessary to classify the patients so that their selection for work assignments would be simplified and placed on a scientific basis. As there are over 300 positions in the Sanatorium filled by patients, both paid and non-paid, it can be seen how important it is to have the patients classified.

The advantages of this classification are as follows:

1st. It gives the Physician-in-Charge the opportunity to find out quickly the condition of all the patients, and puts him in a position where he can select the patients for paid positions, and advise, when called upon, in the selection of patients for regular work assignments.

2d. It also puts him in a position where he can quickly decide if a patient who complains of his work assignment has a legitimate reason for complaint.

3d. It helps the resident physician immeasurably in making their work assignments, and is of great aid to their chief clerks, who occasionally have to make a change in assignment at the last moment, in the absence of the resident physician, owing to the sudden illness of a patient, previously assigned.

The first step found necessary in classifying the patients, upon the basis of work assignment, was to revise the present accepted classification of tuberculosis to meet immediate requirements. To render it more simple, we classified Incipient A as 1A; Moderately Advanced A as 2A; Far Advanced A as 3A; etc.

All patients were then divided into four classes:

Class A	1A, 2A	Class C	1C, 2C
Class B	1B, 2B, 3A	Class D	3C

The class A cases we consider the ideal patients for the great majority of our paid positions, and for some non-paid positions, where the work is fairly hard—such as maids in the patient-nurses' home, and the maids who clean the dining hall.

The class B cases we consider to be well enough to fill easy, paid positions when we are unable to obtain class A cases—such as clerk in linen room, postmistress or postmaster, bath attendant, etc., as the hours in these positions are short, and the work not hard—and for non-paid positions where the work is much easier than that done by class A cases.

The class C cases have been rarely used, except when we were unable to obtain class B cases, and then only in positions such as librarians, temperature clerks, and weather clerk, where the work attached to the position was practically nil, and they had plenty of time to sit down and rest.

Class D was put in to complete the classification. The patients coming under this class are bed cases, and should be under care in tuberculosis hospitals and not in a sanatorium, although we have had quite a number of this type of case.

In making out this classification of patients, it was found convenient to make up four charts as follows:

No. 1. Work classification.
No. 2. Work assignments.
No. 3. Weekly census, and stage of disease.
No. 4. Patients' history and past work assignments.

Chart No. 1—Work Classification. On this chart is shown the four classes, A, B, C, and D, under which are placed all the positions filled by patients in the Sanatorium under the headings, Class A, Class A or B, Class B, Class B or C. Under *Class A*

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are placed the great majority of paid positions and a few non-paid positions where the work is considered fairly hard, such as dining-hall maid, and maids in patient-nurses' home, etc. Under *Class A or B* are placed those paid positions where the hours are short and the work not hard, and non-paid positions—such as waitresses, dishwashers, laundry workers, etc. All cases coming under this classification are filled, preferably, from class A, but could be filled by patients coming under class B when we are unable to obtain them from Class A. Under *Class B* are placed most of the remaining non-paid positions—such as office clerks, pantry maids, linen-room assistants, etc. The work done by the patients coming under this heading is light, and rarely averages more than three hours per day. Under *Class B or C* are placed the few remaining positions, such as librarians, temperature clerks, dietitian's clerk, etc. The work attached to these positions is so light that it can be done by Class C cases, but we rarely use cases coming under this heading, except when we are unable to obtain class B cases.

Chart No. 2—Work Assignments. On this chart is shown all the positions filled by the patients in the Sanatorium, both paid and non-paid. It enables the Physician-in-Charge and the resident physicians to tell at a glace what each patient, in the respective classes, is expected to do each day, and the number of hours his work assignment calls for.

Chart No. 3—Weekly Census and Stage of Disease. This chart consists of a weekly census of each unit, with the stage of disease of each patient to the right of their name. These census sheets are carried around by the Physician-in-Charge, and have proven of great value to him when he wished to know what stage a patient was in whom he met on his daily rounds.

Chart No. 4—Patients' History and Past Work Assignments. This chart, which is made large enough to cover a period of three months, gives a brief history of each patient under the following headings:

Date of admission,
Stage of disease,
Name,
Age,
Previous occupation,
Present occupation,
Weight on admission,
Present weight,
Sputum
Date of week ending.

The work assignment of new patients, and changes in assignment of older patients are made each Saturday afternoon by the resident physicians, assisted by their chief clerks. At this time the ward chart of each patient is carefully gone over, and temperature, pulse rate, and weight for the previous week noted, after which the resident physician refers to Charts Nos. 1 and 2, and makes his assignments according to the stage of disease of the patients, and their adaptability for the positions to be filled. These lists of new assignments are posted in each dining hall, and a copy given to the Physician-in-Charge, resident physicians and their chief clerks. As these lists show the assignments at the beginning of each week; and Chart No. 4, under the heading "week ending," shows the assignments for the previous week with the changes, if any were made, it can thus be seen that the Physician-in-Charge has in his possession a complete record of the work assignments of all assigned patients in the Sanatorium.

Chart No. 4 was made up for the use of the Physician-in-Charge, and has proven invaluable as an aid to him in the assignment of patients to paid positions. For

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instance, if a certain paid position is to be filled, it is but a few moments' work for him to look through the chart and pick out those patients who had a similar position to the one to be filled prior to their admission, the stage of disease, and whether or not they have gained in weight. He can also see what their work assignments for the past few weeks have been, and if they have lost any time through illness. When the Physician-in-Charge has selected the patient from this chart whom he considers the proper one, for the position in question, it is a simple matter to ask the resident physician to look over the patient's ward chart, and report what his medical history has been since admission. It can thus be seen how much easier this is than it would be to have the resident physician look through each ward chart consecutively, as he formerly did, when he wished to find a patient to fill a vacant position.

CHART No. 1—WORK CLASSIFICATION

MALE UNIT

Work Classification	Stage Classification by Physical Signs and Symptoms
Class A—1 A	Incipient A
2 A	Moderately Advanced A
Class B—1 B	Incipient B
2 B	Moderately Advanced B
3 A	Far Advanced
Class C—3 B	Far Advanced B
Class D—1 C	Incipient C
2 C	Moderately Advanced C
3 C	Far Advanced C

Class A

1	Clerk	Office of Resident Physician	Paid
1	Fireman	Recreation Building	Paid
1	Orderly—Day	Male Infirmary	Paid
1	Cleaner	Male Infirmary	Paid
1	Orderly—Night	Male Infirmary	Paid
1	Captain	Sub-standard	Paid
1	Outside Patient Nurse		Paid
1	Captain	Shack for Boys 10-14 Years of Age	Paid
2	Captains	Reception Shack	Paid
1	Laboratory Chief	Laboratory	Paid
1	Man in Charge	Germicide Building	Paid
1	Disinfector		Paid
1	Head Waiter	Male Dining Hall	Paid
1	Assistant Cook	Male Dining Hall	Paid
1	2nd Assistant Cook	Male Dining Hall	Paid
1	Kitchenman	Male Dining Hall	Paid
1	Reliefman	Male Dining Hall	Paid
1	Potwasher	Male Dining Hall	Paid
1	Pantryman	Male Dining Hall	Paid
1	Dishwasher—Machine	Male Dining Hall	Paid
1	Dishpacker	Male Dining Hall	Non-Paid
2	Cleaners	Male Dining Hall	Paid
2	Firemen	Male Dining Hall	Paid
2	Blanketmen		Non-Paid
1	Man	Sewing Room	Paid
3	Clerks	Office of Superintendent	Paid
2	Telephone Operators		Paid
1	Watchman		Paid
2	Firemen—Extra		Paid
1	Reliefman	Relieves Watchman and Night Fireman	Paid.
2	Drivers		Paid
1	Stableman	Stable	Paid
2	Men	Piggery	Paid

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CHART No. 1—WORK CLASSIFICATION—Continued

Class A or B

1	Clerk	Throat Room and Relief Duty	Paid
1	Postmaster	In Charge of All Mail	Paid
*1	Storekeeper		Paid
*1	Newsboy		Paid
1	Reliefman	Male Infirmary	Non-Paid
1	Pharmacist	Dispensary	Paid
1	Bath Attendant	In Charge of Patients' Baths	Paid
2	Laboratory Assistants	Laboratory	Paid
1	Man	Garbage House	Non-Paid
5	Waiters, 1st Setting	Male Dining Hall	Non-Paid
16	Waiters, 2nd Setting	Male Dining Hall	Non-Paid
3	Dishwashers (hand)	Male Dining Hall	Non-Paid
2	Meal Carriers	Male Dining Hall	Non-Paid
1	Houseman	Staff House	Npn-Paid
2	Housemen	Nurses Home	Non-Paid
1	Houseman	Home of Supervisor of Male Unit	Non-Paid
1	Houseman	Clerks' Shack	Non-Paid
1	Houseman	Teachers' Shack	Non-Paid
8	Laundry Workers (A.M.)	Laundry	Non-Paid
4	Laundry Workers (P.M.)	Laundry	Non-Paid
1	Soap Maker	Laundry	Non-Paid
2	Workers	Linen Room	Non-Paid
2	Gardeners		Non-Paid
	Patients on Relief Duty	6 or more, depends on Census	Non-Paid
1	Driver	Physician in Charge	Paid
*1	Barber		Paid
*1	Cobbler		Paid
*1	Tailor		Paid

Class B

4	Clerks	Office of Resident Physician	Non-Paid
2	Clerks	Office of Supervisor	Non-Paid
3	Messengers		Non-Paid
2	Cleaners	Recreation Hall	Non-Paid
1	Floorman	Male Infirmary	Non-Paid
1	Dishwasher	Male Infirmary	Non-Paid
2	Cleaners	Dormitory Over Infirmary	Non-Paid
2	Cleaners	Sub-Standard Shack	Non-Paid
1	Cleaner	Dispensary	Non-Paid
1	Walking Captain		Non-Paid
2	Laboratory Workers	Laboratory	Non-Paid
2	Assistants	Germicide Building	Non-Paid
2	Potwashers	Male Dining Hall	Non-Paid
3	Silverwashers	Male Dining Hall	Non-Paid
1	Breadman	Male Dining Hall	Non-Paid
1	Butterman	Male Dining Hall	Non-Paid
1	Milkman	Male Dining Hall	Non-Paid
2	Servers, 1st Setting	Male Dining Hall	Non-Paid
4	Servers, 2nd Setting	Male Dining Hall	Non-Paid
2	Servers, Bed Patients	Male Dining Hall	Non-Paid
1	Man	Storeroom	Non-Paid
3	Cleaners	Dining Hall and Pantry	Non-Paid
2	Moppers	Dining Hall and Pantry	Non-Paid
1	Telephone Operator, Relief		Non-Paid
2	Paper Pickers		Non-Paid

* These positions come under the patients' co-operative store and are paid out of its funds.

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CHART No. 1—WORK CLASSIFICATION—Continued

Class B or C

2 Librarians	Library	Non-Paid
4 Clerks	Temperature	Non-Paid
1 Clerk	Dietition	Non-Paid
14 Men on Vegetables	Male Dining Hall	Non-Paid
1 Clerk	Weather and Baggage	Non-Paid

MALE PATIENTS, HAVING POSITIONS AT FEMALE UNIT

Work Classification	Stage Classification by Physical Signs and Symptoms
Class A—1A	Incipient A
—2A	Moderately Advanced A
Class B—1 B	Incipient B
2 B	Moderately Advanced B
3 A	Far Advanced A
Class C—3 B	Far Advanced B
Class D—1 C	Incipient C
2 C	Moderately Advanced C
3 C	Far Advanced C

Class A

1 Assistant Cook	Dining Hall	Paid
1 Reliefman	Dining Hall	Paid
1 Milkman	Dining Hall	Paid
1 Potwasher	Dining Hall	Paid
2 Dishwashers	Dining Hall	Paid
2 Cleaners	Dining Hall	Paid
1 Bakers' Assistant		Paid
2 Laundry Workers	Laundry	Piad
2 Firemen	Dining Hall	Paid
1 Fireman—Night		Paid
3 General Utility Men		Paid
1 Watchman—Night		Paid

Class A or B

1 Houseman	Home of Physician in Charge	Non-Paid

Class B

1 Houseman	Male Dormitory	Non-Paid

FEMALE UNIT

Work Classification	Stage Classification by Physical Signs and Symptoms
Class A—1 A	Incipient A
2 A	Moderately Advanced A
Class B—1 B	Incipient B
2 B	Moderately Advanced B
3 A	Far Advanced A
Class C—3 B	Far Advanced B
Class D—1 C	Incipient C
2 C	Moderately Advanced C
3 C	Far Advanced C

CLASS A

2 Clerks	Office of Physician in Charge	Paid
1 Stenographer	Office of Physician in Charge	Paid
1 Clerk	Office of Resident Physician	Paid
4 Patient Nurses	Female Infirmary	Paid
1 Outside Patient Nurse		Paid
1 Nurse	Children's Shack A	Paid

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CHART No. 1—WORK CLASSIFICATION—Continued

1 Nurse	Children's Shack B	Paid
2 Nurses	Children's Shack C	Paid
1 Captain	Reception Shack	Paid
1 Captain	Shack for Adolescent Females	Paid
1 Maid	Germicide Building	Paid
1 Assistant Dietitian	Female Dining Hall	Paid
1 Maid	Female Dining Hall	Non-Paid
1 Cook	Home of Physician in Charge	Paid
1 Cook	Home of Superintendent	Paid
1 Maid	Home of Superintendent	Paid
1 Cook	Staff House	Paid
1 Maid	Staff House	Paid
1 Cook	Nurses' Home	Paid
1 Maid	Nurses' Home	Paid
1 Maid	Home of Supervisor of Male Unit	Paid
2 Maids	Patient Nurses' Home	Non-Paid
1 Forelady	Laundry	Paid
4 Laundresses	Laundry	Paid
1 Telephone Operator		Paid

CLASS A OR B

2 Waitresses	Female Infirmary	Non-Paid
2 Dishwashers	Female Infirmary	Non-Paid
1 Maid	Female Infirmary	Non-Paid
1 Nurse	Dispensary	Paid
1 Head-Waitress	Female Dining Hall	Non-Paid
4 Waitresses, 1st Setting	Female Dining Hall	Non-Paid
19 Waitresses, 2nd Setting	Female Dining Hall	Non-Paid
4 Dishwashers	Female Dining Hall	Non-Paid
8 Mangle Workers	Laundry	Non-Paid
1 Clerk	Linen Room	Paid
1 Postmistress		Paid
Patients on Relief Duty, 6 or more, depending on census		Non-Paid

CLASS B

3 Clerks	Office of Resident Physician	Non-Paid
2 Messengers	Office of Resident Physician	Non-Paid
6 Maids	Female Infirmary	Non-Paid
1 Maid	Children's Shack (A)	Non-Paid
4 Maids	Children's Shack (C)	Non-Paid
1 Assistant Captain	Reception Shack	Non-Paid
1 Captain	Shack (A) Containing 40 Patients	Non-Paid
1 Captain	Shack (B) Containing 40 Patients	Non-Paid
2 Maids	Germicide Building	Non-Paid
8 Pantry Maids	Female Dining Hall	Non-Paid
3 Silverwashers	Female Dining Hall	Non-Paid
3 Kitchenmaids	Female Dining Hall	Non-Paid
1 Maid	Female Dining Hall	Non-Paid
1 Maid	Patient Nurses Home	Non-Paid
3 Assistants	Linen Room	Non-Paid
3 Women	Sewing Room	Non-Paid
1 Telephone Operator	Relief	Non-Paid

CLASS B OR C

1 Clerk	Throat Room	Non-Paid
1 Maid	Dispensary	Non-Paid
9 Women on Vegetables	Female Dining Hall	Non-Paid
1 Maid	Cellar of Shack Where Patients Wash Their Clothes	Non-Paid
1 Librarian		Non-Paid

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CHART No. 2—WORK ASSIGNMENTS

MALE UNIT

OFFICE OF RESIDENT PHYSICIAN

Clerk *Class A (1)* *Paid*	Clerk to Resident Physician. Supervises work of non-paid clerks.	9 A.M. to 12 M. 2 P.M. to 5 P.M.
Throat Room and Relief Clerk *Class A or B (1)* *Paid*	Assists physician in charge of nose and throat service three afternoons a week and records examinations on charts. Assists clerk to Resident Physician and relieves postmaster, pharmacist and storekeeper on their days off.	9 A.M. to 12 M. 2 P.M. to 5 P.M.
Clerks *Class B (4)* *Non-paid*	Enter temperatures, weights, sputum, urine, blood and dental examinations on charts.	10 A.M. to 12 M. 2 P.M. to 4 P.M.
Office of Supervisor Clerks *Class B (2)* *Non-paid*	Assist with clerical work. Keep record of baths and work done by patients. Make out name plates for patients' beds.	10 A.M. to 12 M. 2 P.M. to 4 P.M.
Messengers *Class B (3)* *Non-paid*	(1) Carries reports to and from each unit. (1) Attached to office of Supervisor. Is sent for patients needed by doctors and supervisor and carries messages around male unit. (1) Attached to office of Supervisor. Is sent for patients needed by doctors and supervisor and carries messages around male unit.	9 A.M. to 11 A.M. 1.30 P.M. to 3.30 P.M. 9 A.M. to 12 M. 2 P.M. to 5 P.M.
Postmaster *Class A or B (1)* *Paid*	Receives and distributes all incoming mail. Has charge of outgoing mail from male unit.	9.30 A.M. to 12.30 P.M. 2 P.M. to 3.30 P.M. 6 P.M. to 7.30 P.M.
Librarians *Class B or C (2)* *Non-paid*	Are responsible for books in library and keep record of books loaned to patients. Keep library clean.	10 A.M. to 12 M. 2 P.M. to 4 P.M.
Temperature Clerks *Class B or C (4)* *Non-paid*	Take temperatures of patients twice daily and record same on charts.	10 A.M. to 12 M. 2 P.M. to 4 P.M.
Storekeeper *Class A or B (1)* *Paid*	Has charge of patients' store under the direction of Resident Physician of male unit.	9 A.M. to 12.30 P.M. 6 P.M. to 7.30 P.M.
**Newsboy* *Class A or B (1)* *Paid*	Delivers newspapers to male and female units and assists in patients' store.	9 A.M. to 11 A.M. 1 P.M. to 5.30 P.M.
Cleaners *Class B (2)* *Non-paid*	(1) Cleans floor of recreation hall. (1) Sweeps cement porch of recreation building. Cleans store and pool tables.	9 A.M. to 11 A.M. 4 P.M. to 5 P.M. 9 A.M. to 11 A.M. 4 P.M. to 5 P.M.
Fireman *Class A (1)* *Paid*	Has charge of low pressure heating boiler.	8.30 A.M. to 7.30 P.M. Assigned 8 hrs.

MALE INFIRMARY

Orderly—Day *Class A (1)* *Paid*	Serves meals under direction of nurse and waits on bed patients. Gives bed baths twice weekly. Cleans refrigerator once a week. Sees that each patient washes his hands and uses mouth wash before each meal. Assorts and takes all soiled linen to linen room daily.	8 A.M. to 8 P.M. Assigned 8 hrs.

*These positions come under the patients' co-operative store and are paid out of its funds.

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CHART No. 2—WORK ASSIGNMENTS—Continued

Cleaner *Class A (1)* *Paid*	Helps serve meals and carries trays. Sweeps wards, patients' rooms, nurses' office, operating room, locker room, porches and corridor each morning. Mops kitchen and cleans bathroom, brass and paint daily.	8 A.M. to 6 P.M. Assigned 8 hrs.
Orderly—Night *Class A (1)* *Paid*	Gives out medications during night. Answers all calls to sick patients in outside shacks. In cases of Hemoptysis, gives regulation treatment and immediately notifies nurse on call. Gives out wash basins to patients in the morning and arranges trays for breakfast.	8 P.M. to 7.30 A.M.
Reliefman *Class A or B* *Non-paid*	Relieves the day orderly and cleaner one day a week. Also relieves night orderly one night a week.	Hours of duty depend on assignment.
Floorman *Class B (1)* *Non-paid*	Puts on preparation of wax and oil and and polishes the floors of ward, seven (7) small rooms and hall daily.	9.30 A.M. to 11.30 A.M. 2 P.M. to 3 P.M.
Dishwasher *Class B (1)* *Non-paid*	Washes dishes, glasses and silver used by patients.	8 A.M. to 9 A.M. 1 P.M. to 2 P.M. 6 P.M. to 7 P.M.
	DORMITORY OVER INFIRMARY	
Cleaners *Class B (2)* *Non-paid*	(1) Makes two beds. Sweeps and cleans bathroom and hall daily. Scrubs three flights of stairs three times a week. Cleans windows when necessary.	10 A.M. to 12 M. 2 P.M. to 3 P.M.
	(1) Cleans private dining room, dietitian's office, washroom and stairs leading to basement.	10 A.M. to 12 M. 2 P.M. to 3 P.M.
Sub-Standard Shack Captain *Class A (1)* *Paid*	Is responsible for behavior of patients and cleanliness of shack. Takes temperatures, gives out medicines and cares for sick patients under supervision of nurse. Serves meals and helps with shack work.	12 M. to 12 M. Assigned 8 hrs. On call when necessary.
Cleaners *Class B (2)* *Non-paid*	Help with shack work. Sweep porches, scrub sitting room and clean refrigerator and toilets.	8.30 A.M. to 10.30 A.M. (2 P.M. to 3 P.M. when necessary.)
Outside Patient Nurse *Class A (1)* *Paid*	In charge of sick patients in outside shacks. Assists in linen room.	7 A.M. to 7 P.M. Assigned 8 hrs.
Dispensary Pharmacist *Class A or B (1)* *Paid*	Receives all drugs and dispenses drugs to patients not in the infirmary or sub-standard. Sends in monthly requisition for drugs. Keeps list of bed patients in outside shacks.	7.15 A.M. to 7.30 A.M. 8 A.M. to 12.30 P.M. 1 P.M. to 2 P.M. 5 P.M. to 5.30 P.M. 6 P.M. to 7 P.M.
Cleaner *Class B (1)* *Non-paid*	Cleans dispensary every morning. Changes towels in doctors' examining rooms daily and their gowns when necessary.	8 A.M. to 9.30 A.M. 1 P.M. to 2 P.M. 4 P.M. to 4.30 P.M.

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CHART No. 2—WORK ASSIGNMENTS—Continued

Shack for Boys 10-14 Years of Age

Captain *Class A (1)* *Paid*	Is held responsible for the cleanliness of shack and deportment of 20 boys. Takes temperatures, gives out medicines and cares for sick patients under supervision of nurse. Sees that children wash their hands and clean their teeth before each meal and that they report for school at 9.30 A.M. and 2 P.M. Also supervises recreation of boys.	12 M. to 12 M. Assigned 8 hrs. On call when necessary.
Reception Shack Captains *Class A (2)* *Paid*	(1) Admits and instructs new patients. Takes temperatures, gives out medicines and cares for sick patients under supervision of nurse.	12 M. to 12 M. Assigned 8 hrs. On call when necessary.
	(1) Is responsible for the cleanliness of shack and supervises shack work. Assists other shack captain and relieves him for hours off.	12 M. to 12 M. Assigned 8 hrs. On call when necessary.
Walking Captain *Class B (1)* *Non-paid*	Takes new patients on their daily walks.	Assignment varies between 20 minutes and 2 hrs. daily.
Bath Attendant *Class A or B (1)* *Paid*	Keeps record of patients' baths and reports to Resident Physician those patients not bathing at least twice a week. Keeps baths and toilets under dining hall clean.	9 A.M. to 12 M. 2 P.M. to 5. P.M.

LABORATORY

Laboratory Chief *Class A (1)* *Paid*	Examines sputum and urine specimens. Makes examinations of blood and other specimens when called upon to do so.	9 A.M. to 5.30 P.M. Assigned 7 hrs.
Laboratory Assistants *Class A or B (2)* *Paid*	Assist in laboratory.	9 A.M. to 5 P.M. Assigned 6 hrs.
Laboratory Workers *Class B (2)* *Non-paid*	Help to prepare specimens for examination and keep laboratory clean.	10 A.M. to 12 M. 2 P.M. to 4 P.M.

Germicide Building

Man in Charge *Class A (1)* *Paid*	Has charge of the burning and refilling of all sputum boxes. Reports to Resident Physician patients who do not change their sputum boxes and patients whose sputum shows traces of blood.	7.30 A.M. to 7 P.M. Assigned 7 hrs.
Assistants *Class B (2)* *Non-paid*	(1) Collects sputum boxes from infirmary, sub-standard and outside bed patients. Helps to change and refill patients sputum boxes.	7 A.M. to 10 A.M.
	(1) Folds gauze and helps to collect outside bed patients' sputum boxes.	9 A.M. to 11.30 A.M. 4 P.M. to 4.30 P.M.
Disinfector *Class A (1)* *Paid*	Disinfects toilets. Keeps lavatories clean and attends to fires.	9 A.M. to 5 P.M. Assigned 6 hrs.
Garbage House Man *Class A or B (1)* *Non-paid*	Keeps garbage house clean.	10 A.M. to 12 M. 2 P.M. to 4 P.M.

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CHART No. 2—WORK ASSIGNMENTS—Continued

MALE DINING HALL

Head Waiter *Class A (1)* *Paid*	Instructs new waiters and is responsible for order in the dining hall. Supervises setting of tables, sees that all waiters report for duty and that tables are left in a tidy condition Takesi nventory of dishes and silver once a month. Looks after the dining hall linen, etc. Checks up the supplies on Monday and relieves the dietitian on her day off.	6.30 A.M. to 6.30 P.M. Assigned 8 hrs.
Clerk—Dietitian's. *Class B or C (1)* *Non-paid*	Assists dietitian with clerical work.	1.30 P.M. to 4 P.M.
Waiters—First Setting *Class A or B (5)* *Non-paid*	Wait on patient waiters and paid help.	6.30 A.M. to 7.30 A.M. 11.30 A.M. to 12.30 P.M. 4.30 P.M. to 5.30 P.M.
Waiters—Second Setting *Class A or B (16)* *Non-paid*	Wait on patients.	6.45 A.M. to 8.15 A.M. 11.45 A.M. to 1.15 P.M. 4.45 P.M. to 6.15 P.M. Assigned 3 hrs.
Assistant Cook *Class A (1)* *Paid*	Assists cook in preparing meat for the roaster and soup stock. Assists in making cereals, desserts and helps generally in the preparation of breakfast, dinner and supper.	6 A.M. to 6.30 P.M. Assigned 8 hrs.
2nd Assistant Cook *Class A (1)* *Paid*	When he reports for duty in the morning, carries meat with the assitance of kitchenman from ice box to the kitchen. Counts the eggs for breakfast. Brings in vegetables for dinner and supper and helps to clean them. Washes vegetable cookers. Takes care of range and washes small cooking utensils. Mops kitchen twice a day.	6.30 A.M. to 6.30 P.M. Assigned 8 hrs.
Kitchenman *Class A (1)* *Paid*	Makes toast for the Infirmary, Substandard and sick patients in outside shacks. Cuts butter in moulds. Cleans the milk-room. Helps clean vegetables and prepares them for the soup. Scrubs the tables, sinks, walls and hood over the range. Assists in mopping kitchen.	6.30 A.M. to 6.30 P.M. Assigned 8 hrs.
Reliefman *Class A (1)* *Paid*	Relieves three days in the kitchen and three days in the pantry.	6.30 A.M. to 6.30 P.M. Assigned 8 hrs.
Potwasher *Class A (1)* *Paid*	Washes all pots and pans used for cooking and keeps sink and floor clean. Mops the receiving room for meats, groceries, etc. Prepares the meats and groceries for weighing.	6.30 A.M. to 6.30 P.M. Assigned 8 hrs.
Potwashers *Class B (2)* *Non-paid*	Wash all teapots, cereal pots, trays, ladles and large white pitchers.	7.15 A.M. to 8.15 A.M. 12.15 P.M. to 1.15 P.M. 5.15 P.M. to 6.15 P.M.

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CHART No. 2—WORK ASSIGNMENTS—Continued

Pantryman *Class A (1)* *Paid*	Is assisted by handwashers in scraping and packing dishes and silver to be washed by washing machine. Also places dishes in dish pans for handwashers. Washes tables and mops floor after each meal. Responsible for the cleanliness of pantry.	6.30 A.M. to 6.30 P.M. Assigned 8 hrs.
Dishwasher *(Machine)* *Class A (1)* *Paid*	Washes dishes and silver which have been packed in wire baskets by the pantryman and handwashers and when necessary assists in packing the dishes. When dishes and silver are washed he cleans out tanks and empties garbage cans. Cleans windows once a week.	6.30 A.M. to 6.30 P.M. Assigned 8 hrs.
Dishwashers (Hand) *Class A or B (3)* *Non-paid*	Assist pantryman in packing dishes for washing machine and wash dishes used in small dining hall.	7.15 A.M. to 8.15 A.M. 12.15 P.M. to 1.15 P.M. 5.15 P.M. to 6.15 P.M.
Dishpacker *Class A (1)* *Non-paid*	Puts dishes in dish closet.	7.15 A.M. to 8.15 A.M. 12.15 P.M. to 1.15 P.M. 5.15 P.M. to 6.15 P.M.
Silverwashers *Class B (3)* *Non-paid*	Assort and polish the spotted silver three times a day.	7.30 A.M. to 8.30 A.M. 12.30 P.M. to 1.30 P.M. 5.30 P.M. to 6.30 P.M.
Dining Hall Cleaners *Class A (2)* *Paid*	Sweep and clean dining room, hat and coat room, porch and walks every day. Clean private dining room, office and steps to basement daily and mop twice a week.	8.30 A.M. to 6.30 P.M. Assigned 6½ hrs.
Breadman *Class B (1)* *Non-paid*	Cuts all bread. Keeps bread box and machine clean.	7.15 A.M. to 8.15 A.M. 12.15 P.M. to 1.15 P.M. 5.15 P.M. to 6.15 P.M.
Butterman *Class B (1)* *Non-paid*	Cuts all butter. Keeps butter machine and dishes clean.	7.15 A.M. to 8.15 A.M. 12.15 P.M. to 1.15 P.M. 5.15 P.M. to 6.15 P.M.
Milkman *Class B (1)* *Non-paid*	Gives out milk for breakfast, dinner and supper.	7.15 A.M. to 8.15 A.M. 12.15 P.M. to 1.15 P.M. 5.15 P.M. to 6.15 P.M.
Servers—First Setting *Class B (2)* *Non-paid*	Dispense all food for first setting.	6.30 A.M. to 7.30 A.M. 11.30 A.M. to 12.30 P.M. 4.30 P.M. to 5.30 P.M.
Servers—Second Setting *Class B (4)* *Non-paid*	Dispense all food for second setting.	7.15 A.M. to 8.15 A.M. 12.15 P.M. to 1.15 P.M. 5.15 P.M. to 6.15 P.M.
Servers—Bed Patients *Class B (2)* *Non-paid*	(1) Delivers meals to Infirmary.	6.45 A.M. to 8 A.M. 11.30 A.M. to 12.30 P.M. 4.30 P.M. to 6 P.M. Assigned 2¾ hrs.
	(1) Puts meals in baskets for Substandard and outside shacks.	6.45 A.M. to 8 A.M. 11.30 A.M. to 12.30 P.M. 4.30 P.M. to 6 P.M. Assigned 2¾ hrs.
Meal Carriers *Class A or B (2)* *Non-paid*	Carry meals to bed patients in Substandard and outside shacks.	6.45 A.M. to 8 A.M. 11.30 A.M. to 12.30 P.M. 4.30 P.M. to 6 P.M. Assigned 2¾ hrs.
Vegetables *Class B or C (14)* *Non-paid*	Prepare all vegetables for patients' meals. Keep vegetable room clean.	10 A.M. to 12 M. (2 P.M. to 4 P.M. when necessary).

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CHART No. 2—WORK ASSIGNMENTS—Continued

Firemen—Dining Hall *Class A (2)* *Paid*	Have charge of boiler supplying steam for dining hall kitchen.	4.30 A.M. to 12 M. 12 M. to 7 P.M.
Storeroom Man *Class B (1)* *Non-paid*	Keeps storeroom clean and assists in washing windows in kitchen.	9.30 A.M. to 11.30 A.M. 2 P.M. to 3 P.M.
Cleaners *Class B (3)* *Non-paid*	(1) Cleans coffee and tea urns and fire extinguishers in dining hall and pantry.	9.30 A.M. to 11.30 A.M.
	(1) Cleans the brass in dining hall and pantry	9.30 A.M. to 11.30 A.M.
	(1) Polishes four large and two small steampots every day. Scrubs the shelves in ice box once a week.	8 A.M. to 9 A.M. 1 P.M. to 2 P.M.
Moppers *Class B (2)* *Non-paid*	(1) Mops pantry daily.	8.30 A.M. to 9.30 A.M. 1.30 P.M. to 2.30 P.M.
	(1) Brings up coal for range and assists in mopping kitchen.	8 A.M. to 10 A.M.
	PRIVATE HOUSES	
	STAFF HOUSE	
Houseman *Class A or B (1)* *Non-paid*	Carries up coal. Takes care of furnace. Assists in cleaning, washes windows, keeps surrounding grounds clean.	9.30 A.M. to 11.30 A.M. (2 P.M. to 4 P.M. when necessary).
	NURSES' HOME	
Housemen *Class A or B (2)* *Non-paid*	Carry up coal. Take care of furnace. Assist in cleaning, wash windows, keep surrounding grounds clean.	9.30 A.M. to 11.30 A.M. (2 P.M. to 4 P.M. when necessary).
	HOME OF SUPERVISOR OF MALE UNIT	
Houseman *Class A or B (1)* *Non-paid*	Carries up coal. Takes care of furnace. Assists in cleaning, washes windows, keeps surrounding grounds clean.	9.30 A.M. to 11.30 A.M. (2 P.M. to 4 P.M. when necessary).
	CLERKS' SHACK	
Houseman *Class A or B (1)* *Non-paid*	Takes care of stove. Does general housework and keeps surrounding grounds clean.	9.30 A.M. to 11.30 A.M. (2 P.M. to 4 P.M. when necessary).
	TEACHERS' SHACK	
Houseman *Class A or B (1)* *Non-paid*	Takes care of stove. Does general housework and keeps surrounding grounds clean.	9.30 A.M. to 11.30 A.M. (2 P.M. to 4 P.M. when necessary).
	LAUNDRY	
Laundry Workers—A.M. *Class A or B (8)* *Non-paid*	(6) Work on mangle. (2) Assist foreman in putting clothes in washers.	9 A.M. to 12 M.
Laundry Workers—P.M. *Class A or B (4)* *Non-paid*	Hang up patients' clothing and bath towels. Carry wet wash to mangle.	1.30 P.M. to 4.30 P.M.
Soap Maker *Class A or B (1)* *Non-paid*	Renders out fat and keeps roaster and soap room clean.	9 A.M. to 12 M.

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CHART No. 2—WORK ASSIGNMENTS—Continued

Linen Room Workers *Class A or B (2)* *Non-paid*	Unpack and sort all laundry received at male unit. Check and distribute same under supervision of nurse in charge. Mop floor, clean windows and scrub clothes boxes.	9.30 A.M. to 11.30 A.M. 2 P.M. to 4 P.M.
Blanket Men *Class A (2)* *Non-paid*	Collect soiled linen from outside shacks. Count and sort soiled linen from dining room, kitchen and male infirmary daily. On Thursday, admission day, deliver blankets, bedding and fur coats, when needed, to Reception Pavilion for new patients. Collect blankets and bedding from discharged patients. Keep blanket room and fumigating house clean.	9 A.M. to 11 A.M. 3 P.M. to 4.30 P.M.
Sewing Room Man *Class A (1)* *Paid*	Mends all institutional linen used at male unit.	9 A.M. to 12 M. 2 P.M. to 5 P.M.
Clerks *Class A (3)* *Paid*	Perform clerical work in office of Superintendent.	8 A.M. to 4 P.M. Assigned 7 hrs.
Telephone Operators *Class A (2)* *Paid*	Operate telephone switchboard.	4 P.M. to 12 M. 12 M. to 8 A.M. Alternate every two weeks.
Telephone Operator—Relief *Class B (1)* *Non-paid*	Relieves regular telephone operator for supper and works eight (8) hours on the day the operators change their tour of duty.	5.30 P.M. to 6.30 P.M. daily. 4 P.M. to 12 M. every second week.
Weather and Baggage Clerk *Class B or C (1)* *Non-paid*	Takes daily meteorological readings and has charge of patients' baggage room.	8.30 A.M. to 10 A.M. 5 P.M. to 5.30 P.M.
Gardeners *Class A or B (2)* *Non-paid*	Take care of flower beds and hot houses.	10 A.M. to 12 M. 2 P.M. to 4 P.M.
Paper Pickers *Class B (2)* *Non-paid*	Pick up all loose paper on grounds and deposit same in rubbish cans.	10 A.M. to 12 M. 2 P.M. to 4 P.M.
Patients on Relief Duty *Class A or B (6 or more, depends on census)* *Non-paid*	When not relieving assigned patients, perform general work, such as taking care of lawns and removing debris. Also transfer beds from one shack to another and patients from outside shacks to Infirmary and Sub-standard.	10 A.M. to 12 M. 2 P.M. to 3 P.M.
Watchman—Night *Class A (1)* *Paid*	Makes rounds in shacks to see that all patients are in bed and lights out by 9.30 P.M. Makes rounds of unit several times during night. Calls patients who have early work assignments.	7 P.M. to 7 A.M.
Firemen—Extra *Class A (2)* *Paid*	(Day) Has charge of fires in various houses during winter months. (Night) Has charge of fires in various houses, dining hall, recreation hall and reception shack.	7 A.M. to 7 P.M. Assigned 8 hrs. 7 P.M. to 7 A.M. Assigned 8 hrs.
Reliefman *Class A (0)* *Paid*	Relieves watchmen and night fireman for hours and nights off.	Hours of duty depend on assignment.

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CHART No. 2—WORK ASSIGNMENTS—Continued

Drivers *Class A (2)* *Paid*	(1) Takes passengers to and from trains and carries mail. (1) Delivers mail to female unit and brings specimens of sputum and urine from female unit to laboratory. Also meets trains when occasion demands. Has charge of horse drawn lawn mower.	6.30 A.M. to 7 P.M. Assigned 8 hrs. 7 A.M. to 7.30 P.M. Assigned 8 hrs.
Driver *Class A or B (1)* *Paid*	Drives Physician in charge.	8 A.M. to 6 P.M. Assigned 6 hrs.
Stableman *Class A (1)* *Paid*	Keeps stable clean and relieves drivers on their days off.	8 A.M. to 7 P.M. Assigned 8 hrs.
Piggery *Class A (2)* *Paid*	(1) Is responsible for the care of an average of 120 pigs. (1) Assists in the care of the pigs.	6 A.M. to 6.30 P.M. Assigned 8 hrs. 6 A.M. to 6.30 P.M. Assigned 8 hrs.
**Barber* *Class A or B (1)*		9 A.M. to 12 M. 2 P.M. to 5 P.M.
**Cobbler* *Class A or B (1)*		9 A.M. to 12 M. 2 P.M. to 5 P.M.
**Tailor* *Class A or B (1)*	Cleans, presses and repairs patients' clothes. Repairs institutional blankets, fur coats and also makes canvas tents.	9 A.M. to 12 M. 2 P.M. to 5 P.M.

MALE PATIENTS HAVING POSITIONS AT FEMALE UNIT

	Duties	Hours of Duty
Assistant Cook *Class A (1)* *Paid*	Has charge of range and one large steel table. Prepares cereal for breakfast. Preparation of soup meats and vegetables for dinner, carves all meat and assists generally with supper.	7 A.M. to 6.30 P.M. Assigned 8 hrs.
Reliefman *Class A (1)* *Paid*	Relieves in pantry three days and three days in kitchen weekly.	7 A.M. to 6.30 P.M. Assigned 8 hrs.
Milkman *Class A (1)* *Paid*	Charge of ice boxes. Gives out milk for breakfast, dinner and supper. Checks all meats received and assists with grocery supplies once weekly. Mops service pantry after each meal and assists in cleaning pots.	7 A.M. to 6.30 P.M. Assigned 8 hrs.
Potwasher *Class A (1)* *Paid*	Washes pots and pans. Cleans vegetable steamers. Mops floor after each meal and assists generally in cleaning kitchen.	7 A.M. to 6.30 P.M. Assigned 8 hrs.
Dishwashers *Class A (2)* *Paid*	(1) Packs all dishes for washing, mops floor three times daily and assists in general cleaning of pantry. (1) Washes all dishes in washing machine. Assists in general cleaning of pantry, charge of garbage and cans used in pantry. Also responsible for cleanliness of receptacle for garbage cans.	8 A.M. to 10 A.M. 12 M. to 2 P.M. 5 P.M. to 6.30 P.M. 8 A.M. to 10 A.M. 12 M. to 2 P.M. 5 P.M. to 6.30 P.M.

*These positions come under the patients' co-operative store and are paid out of its funds.

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CHART No. 2—WORK ASSIGNMENTS—Continued

Dining Hall Cleaners *Class A (2)* *Paid*	Sweep dining hall three times daily and mop twice weekly. Clean all windows in dining hall and kitchen once weekly. Keep porches of dining hall clean.	8 A.M. to 11 A.M. 1 P.M. to 3 P.M. 6 P.M. to 6.30 P.M. Assigned 5½ hrs.
Baker's Assistant *Class A (1)* *Paid*	Assists baker generally.	6.30 A.M. to 10.30 A.M. 5 P.M. to 5.30 P.M.
Laundry *Class A (2)* *Paid*	(1) Has charge of the mangle, instructs and supervises the work of male patients feeding mangle. Also collects and checks soiled personals and bed linen belonging to male patients.	8 A.M. to 12 M. 1 P.M. to 5 P.M.
	(1) Assists foreman in filling washing machines and removing clothes when washed to dryers.	8 A.M. to 12 M. 1 P.M. to 5 P.M.
Firemen—Dining Hall *Class A (2)*	Have charge of boiler supplying steam for dining hall kitchen.	5 A.M. to 12 M. 12 M. to 7 P.M.
Fireman—Night *Class A (1)* *Paid*	Has charge of boiler in heating plant.	7 P.M. to 7 A.M.
General Utility Men *Class A (3)* *Paid*	(2) Care of fires in various shacks. Care of lawns. Transfer stretcher cases. Carry bedding. Take meals to infirmary, etc.	7 A.M. to 7 P.M. Assigned 8 hrs.
	(1) Charge of fires in two forty-patient shacks. Keep offices of Physician in charge, Resident Physician, Examining rooms and nose and throat room clean. Care of lawn around women's dining hall.	7 A.M. to 7 P.M. Assigned 8 hrs.
Watchman—Night *Class A (1)* *Paid*	Makes rounds on unit several times during night and takes care of fires in houses and shacks during the winter months.	7 P.M. to 7 A.M.
Houseman—Home of Physician in Charge *Class A or B (1)* *Non-paid*	Takes care of stoves, assists in cleaning, washes windows and keeps surrounding grounds clean.	9.30 A.M. to 11.30 A.M. 2 P.M. to 4 P.M. when necessary.
Houseman—Male Dormitory *Class B (1)* *Non-paid*	Takes daily temperatures of men. Sees that all shack work is done properly.	12 M. to 12 M. Assigned 4 hrs.

FEMALE UNIT

OFFICE OF PHYSICIAN IN CHARGE

	Duties	Hours of Duty
Clerks *Class A (2)* *Paid*	(1) Filing clerk.	9 A.M. to 5 P.M. Assigned 6 hrs.
	(1) Record clerk	9 A.M. to 5 P.M. Assigned 6 hrs.
Stenographer *Class A (1)* *Paid*		9 A.M. to 5 P.M. Assigned 6 hrs.

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CHART No. 2—WORK ASSIGNMENTS—Continued

OFFICE OF RESIDENT PHYSICIAN

Clerk *Class A (1)* *Paid*	Clerk to Resident Physician. Assists with work assignments of patients and supervises work of non-paid clerks.	9 A.M. to 5 P.M. Assigned 6 hrs.
Clerks *Class B (3)* *Non-paid*	(1) Enters weights on charts. Records weekly weights and work assignments in their respective books.	10 A.M. to 12 M. 2 P.M. to 4 P.M.
	(1) Typist.	9 A.M. to 12 M.
	(1) Enters temperatures, sputum, urine, blood and dental examinations on charts. Makes out work cards.	9 A.M. to 12 M.
Throat Room Clerk *Class B or C (1)* *Non-paid*	Enters throat and nose examinations on charts. Assists dietitian with clerical work.	3 P.M. to 4 P.M. 3 days a week. 10 A.M. to 12 M. daily.
Messengers *Class B (2)* *Non-paid*	Are sent for patients needed by doctors and chief clerk. Carry messages around unit.	9.30 A.M. to 12 M. and 2 P.M. to 5 P.M. Alternate every other day.

FEMALE INFIRMARY

Patient Nurses *Class A (4)* *Paid*	Take temperatures, supervise patients' meals and give out medications under direction of Nurse in charge.	7 A.M. to 7 P.M. Assigned 8 hrs.
Waitresses *Class A or B (2)* *Non-paid*	Set up trays and serve meals to bed patients.	8 A.M. to 8.30 A.M. 11.30 A.M. to 12.30 P.M. 4.30 P.M. to 5.30 P.M.
Dishwashers *Class A or B (2)* *Non-paid*	Wash all dishes, glasses and silver for infirmary patients.	8.30 A.M. to 9.30 A.M. 1 P.M. to 2 P.M. 6 P.M. to 7 P.M.
Maids *Class B (6)* *Non-paid*	(2) Sweep and oil three rooms and one porch. One day a week work an hour extra to clean windows.	8.45 A.M. to 9.45 A.M.
	(1) Changes sputum boxes of bed patients. Cleans bathroom and toilet.	9.30 A.M. to 10.30 A.M. 6 P.M. to 6.15 P.M.
	(1) Gives out diets at night, sets up trays for breakfast, washes diet dishes.	7.15 P.M. to 8.15 P.M.
	(1) Sweeps and oils porch and sitting room.	8.45 A.M. to 9.45 A.M.
	(1) Sweeps and oils middle room. Cleans bathroom and toilet.	8.45 A.M. to 10 A.M.
Maid *Class A or B (1)* *Non-paid*	Washes diet dishes. Cleans ice box and stove. Scrubs floor in small kitchen.	10 A.M. to 11.30 A.M. 2 P.M. to 3.15 P.M.
Outside Patient Nurse *Class A (1)* *Paid*	Has supervision over four (4) shacks. Is responsible for the nursing of bed patients in these shacks. Makes rounds with Resident Physician every morning.	8 A.M. to 7 P.M. Assigned 8 hrs.
Dispensary Nurse *Class A or B (1)* *Paid*	Has charge of dispensing all drugs to patients not in the infirmary or substandard. Assists Resident Physician with blood tests.	8 A.M. to 6 P.M. Assigned 6 hrs.
Dispensary Maid *Class B or C (1)* *Non-paid*	Gives out diets twice a day and washes dishes.	10 A.M. to 11 A.M. 3 P.M. to 3.45 P.M.

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CHART No. 2—WORK ASSIGNMENTS—Continued

Nurse of Children's Shack (A) *Class A (1)* *Paid*	Takes care of 16 children.	12 M. to 12 M. Assigned 8 hrs. On call when needed.
Maid of Childrens' Shack (A) *Class B (1)* *Non-paid*	Makes five beds, mops and dusts large sitting room.	10 A.M. to 12 M.
Nurse of Childrens' Shack (B) *Class A (1)* *Paid*	Takes care of 24 children. Is assisted by two of the older girl patients.	12 M. to 12 M. Assigned 8 hrs. On call when needed.
Nurse of Childrens' Shack (C) *Class A (2)* *Paid*	Take care of 32 children.	12 M. to 12 M. Assigned 8 hrs. On call when needed.
Maids of Childrens' Shack (C) *Class B (4)* *Non-paid*	(1) Gives out diets twice a day and bathes four (4) of the younger children daily. (1) Makes 8 cribs daily, once a week assists in cleaning windows. (1) Scrubs two flights of stairs and cleans four toilets. (1) Sweeps, dusts and oils sitting room daily. Assists in cleaning windows once a week.	11.30 A.M. to 12.30 P.M. 3.30 P.M. to 4.45 P.M. 7 P.M. to 7.30 P.M. 8.45 A.M. to 9.45 A.M. On Tuesdays—changing linen. 8.45 A.M. to 12 M. 8.45 A.M. to 9.30 A.M. 1 P.M. to 2 P.M. 8.45 A.M. to 10 A.M. (1 P.M. to 2 P.M. when necessary).
Captain of Reception Shack *Class A (1)* *Paid*	Admits and instructs new patients as to the care of sputum, personal cleanliness, etc. Gives each patient a copy of the rules and is held responsible for their strict observance. Takes temperatures, gives out medicines and cares for sick patients under supervision of nurse.	12 M. to 12 M. Assigned 8 hrs. On call when needed.
Ass't. to Captain of Reception Shack *Class B (1)* *Non-paid*	Relieves captain for hours off and accompanies patients on their daily walks.	12 M. to 12 M. Assigned 4 hrs.
Captain of Shack for Adolescent Females *Class A (1)* *Paid*	Is responsible for deportment of patients and cleanliness of shack. Takes temperatures and cares for sick patients under supervision of nurse.	12 M. to 12 M. Assigned 8 hrs. On call when needed.
Captain of Shack (A) containing 40 patients *Class B (1)* *Non-paid*	Takes temperatures of patients in shack. Sees that all shack work is done properly.	12 M. to 12 M. Assigned 4 hrs.
Captain of Shack (B) containing 40 patients *Class B (1)* *Non-paid*	Takes temperatures of patients in shack. Sees that all shack work is done properly.	12 M. to 12 M. Assigned 4 hrs.
	GERMICIDE BUILDING	
Maid *Class A (1)* *Paid*	Has charge of the burning and refilling of all sputum boxes. Reports to Resident Physician patients who do not change their sputum boxes and whose sputum shows traces of blood.	7.30 A.M. to 7 P.M. Assigned 7 hrs.

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CHART No. 2—WORK ASSIGNMENTS—Continued

Maids *Class B (2)* *Non-paid*	(1) Cuts and folds all gauze. (1) Collects all urine specimens. Gets specimens ready to send to Clinical Laboratory.	8.30 A.M. to 10.30 A.M. 9.30 A.M. to 11 A.M.

FEMALE DINING HALL

Assistant Dietitian *Class A (1)* *Paid*	General assistant to dietitian. Supervises in absence of dietitian.	7 A.M. to 7 P.M. Assigned 7 hrs.
Head Waitress *Class A or B (1)* *Non-paid*	Supervises setting of tables. Sees that all waitresses report for duty and that tables are left in a tidy condition.	7.15 A.M. to 8.30 A.M. 11.30 A.M. to 1 P.M. 4.30 P.M. to 6 P.M. Assigned 2¾ hrs.
Waitresses—First Setting *Class A or B (4)* *Non-paid*	Wait on waitresses for patients, laundry help and men employed in female unit.	7.15 A.M. to 8 A.M. 11.15 A.M. to 12.30 P.M. 4.15 P.M. to 5.30 P.M. Assigned 3¼ hrs.
Waitresses—Second Setting *Class A or B (19)* *Non-paid*	Wait on patients.	7.15 A.M. to 8.30 A.M. 11.30 A.M. to 1 P.M. 4.30 P.M. to 6 P.M. Assigned 2¾ hrs.
Pantry Maids *Class B (8)* *Non-paid*	(1) Cuts all butter, keeps machine and dishes clean.	7.30 A.M. to 8.45 P.M. 11.45 A.M. to 1.15 P.M. 4.45 P.M. to 6.15 P.M. Assigned 2¾ hrs.
	(1) Cuts all bread, keeps bread box and machine clean.	7.30 A.M. to 8.45 P.M. 11.45 A.M. to 1.15 P.M. 4.45 P.M. to 6.15 PM. Assigned 2¾ hrs.
	(1) Makes and serves tea and coffee. Keeps urns clean.	7.30 A.M. to 8.45 P.M. 11.45 A.M. to 1.15 P.M. 4.45 P.M. to 6.15 P.M. Assigned 2¾ hrs.
	(2) Dispense all food under supervision of dietitian.	7.30 A.M. to 8.45 P.M. 11.45 A.M. to 1.15 P.M. 4.45 P.M. to 6.15 P.M. Assigned 2¾ hrs.
	(1) Cleans storeroom daily; ice boxes and windows twice a week.	10 A.M. to 12 M.
	(1) Gives out dishes to waitresses.	6.45 A.M. to 7.15 A.M. 11 A.M. to 11.30 A.M. 4.15 P.M. to 4.45 P.M.
	(1) Gives out all silver. Cleans salt and pepper shakers.	10.45 A.M. to 11.15 A.M. 3.15 P.M. to 4.15 P.M.
Dishwashers *Class A or B (4)* *Non-paid*	(2) Remove dishes from washing machine.	8 A.M. to 8.45 A.M. 12.30 P.M. to 1.15 P.M. 5.30 P.M. to 6.15 P.M.
	(2) Put dishes in dryers and wash by hand when necessary.	8 A.M. to 8.45 A.M. 12.30 P.M. to 1.15 P.M. 5.30 P.M. to 6.15 P.M.
Silverwashers *Class B (3)* *Non-paid*	Wash, dry and clean all silver.	8.30 A.M. to 9.15 A.M. 1 P.M. to 1.45 P.M. 6 P.M. to 6.30 P.M.
Kitchen Maids *Class B (3)* *Non-paid*	(1) Assists cook in making gravy, desserts and sauces.	9.30 A.M. to 12 M.
	(1) Works in the afternoon cutting up vegetables for supper and does cleaning when necessary.	3 P.M. to 4.30 P.M.
	(1) Prepares baskets for bed patients in outside shacks. Washes dishes and baskets.	7.15 A.M. to 9 A.M. 11.30 A.M. to 1.15 P.M. 5 P.M. to 6.15 P.M. Assigned 3¼ hrs.

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CHART No. 2—WORK ASSIGNMENTS—Continued

Dining Hall Maid *Class A (1)* *Non-paid*	Cleans brass and windows and does general cleaning.	10 A.M. to 12 M. 2 P.M. to 4 P.M.
Dining Hall Maid *Class B (1)* *Non-paid*	Cleans toilet and windows.	10 A.M. to 12 M.
Women on Vegetables *Class B or C (9)* *Non-paid*	Prepare all vegetables for patients' meals. Keep vegetable room clean.	10 A.M. to 12 M. (1 P.M. to 2 P.M. when necessary).
	PRIVATE HOUSES	
	HOME OF PHYSICIAN IN CHARGE	
Cook *Class A (1)* *Paid*	Cook, waitress and general housework.	7 A.M. to 7 P.M. Assigned 8 hrs.
	HOME OF SUPERINTENDENT	
Cook *Class A (1)* *Paid*		7 A.M. to 7 P.M. Assigned 8 hrs.
Maid *Class A (1)* *Paid*	Waitress and chambermaid.	7 A.M. to 7 P.M. Assigned 8 hrs.
	STAFF HOUSE	
Cook *Class A (1)* *Paid*		7 A.M. to 7 P.M. Assigned 8 hrs.
Maid *Class A (1)* *Paid*	Waitress and chambermaid.	7 A.M. to 7 P.M. Assigned 8 hrs.
	NURSES' HOME	
Cook *Class A (1)* *Paid*		7 A.M. to 7 P.M. Assigned 8 hrs.
Maid *Class A (1)* *Paid*	Waitress and chambermaid.	7 A.M. to 7 P.M. Assigned 8 hrs.
	HOME OF SUPERVISOR OF MALE UNIT	
Maid *Class A (1)* *Paid*	Waitress and assists in cooking.	7 A.M. to 7 P.M. Assigned 8 hrs.
	PATIENT NURSES' HOME	
Maids *Class A (2)* *Non-paid*	(1) Makes four beds, cleans two rooms, hall, bathroom and two porches. (1) Cleans four rooms, windows and stove.	9 A.M. to 11.30 A.M. 10 A.M. to 12 M.
	PATIENT NURSES' HOME	
Maid *Class B (1)* *Non-paid*	Makes two beds and cleans two rooms.	10 A.M. to 12 M.
Maid in charge of cellar where patients wash their clothes *Class B or C (1)* *Non-paid*	Gives out oil and keeps cellar clean. Takes passes from patients who come to wash their clothes.	8.30 A.M. to 9.30 A.M. cleans cellar. 10 A.M. to 12 M., 2 P.M. to 4 P.M., takes passes.

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CHART No. 2—WORK ASSIGNMENTS—Continued

LAUNDRY

Forelady *Class A (1)* *Paid*	Has charge of girls working on mangle and packing laundry for various houses.	8 A.M. to 5 P.M. Assigned 8 hrs.
Laundresses *Class A (4)* *Paid*	(1) Irons doctors' and nurses' clothes.	8 A.M. to 5 P.M. Assigned 8 hrs.
	(1) Irons doctors' and nurses' clothes.	8 A.M. to 12 M. Assigned 4 hrs.
	(1) Irons waiters' coats.	1 P.M. to 5 P.M. Assigned 4 hrs.
	(1) Irons waiters' coats.	8 A.M. to 12 M. Assigned 4 hrs.
Mangle Workers *Class A or B (8)* *Non-paid*	Feed mangle and fold clothes.	1 P.M. to 4 P.M. Work 4 days a week.
Linen Room Clerk *Class A or B (1)* *Paid*	Has charge of linen room, collecting and distributing patients' personals and bed linen.	9 A.M. to 5 P.M. Assigned 6 hrs.
Assistants *Class B (3)* *Non-paid*	Assist clerk in collecting and distributing patients' personals and bed linen.	9.30 A.M. to 11 A.M.
Sewing Room *Class B (3)* *Non-paid*	Mend institutional linen. Make towels, pillow cases, nurses' uniforms and do whatever mending is required.	9 A.M. to 12 M.
Postmistress *Class A or B (1)* *Paid*	Distributes incoming mail and has charge of outgoing mail from female unit.	9 A.M. to 12 M. 2 P.M. to 3 P.M. 4 P.M. to 5 P.M.
Librarian *Class B or C (1)* *Non-paid*	Is responsible for books in library and keeps record of books loaned to patients. Keeps library clean.	4 P.M. to 7 P.M. Assigned 2½ hrs.
Telephone Operator *Class A (1)* *Paid*	Operates telephone switchboard.	8 A.M. to 12.30 P.M. 2 P.M. to 4 P.M.
Telephone Operator *Class B (1) Relief* *Non-paid*	Relieves regular operator one day each week and for lunch each day.	12.30 P.M. to 2 P.M.
Patients on Relief Duty *Class A or B (6 or more, depending on census* *Non-paid*	These patients are held in reserve to fill vacancies, when needed, of patients having regular assignments.	Hours of duty depend on assignment they fill.

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CHART No. 3—WEEKLY CENSUS AND STAGE OF DISEASE.

Female Unit		Male Unit	
A. E.	1 B	A. V.	1 A
B. A.	2 A	B. S.	2 B
C. N.	3 B	C. F.	1 A
D. L.	3 A	D. G.	1 A
E. T.	2 A	E. M.	2 A
F. C.	2 A	F. M.	2 B
G. R.	2 B	G. V.	2 A
H. F.	1 A	H. G.	2 B
I. D.	2 A	I. J.	2 B
J. A.	2 A		
K. I.	1 A	K. J.	2 B
LaB. M.	1 A	L. F.	1 A
M. A.	2 B	M. J.	2 A
McD. A.	2 A	McA. D.	2 B
N. C.	1 A	N. S.	1 B
O'D. C.	2 B	O. V.	1 B
P. V.	1 A	P. S.	2 B
R. A.	3 A	R. A.	1 A
S. G.	1 A	S. F.	2 B
T. C.	2 A	T. N.	2 A
U. M.	2 A		
V. M.	1 A	V. A.	2 B
W. E.	2 B	W. T.	1 A
Y. Y.	1 A		
Z. C.	1 A		

The above chart shows the initials and stage of disease of forty-six (46) patients whose names were selected from the original Chart No. 3 which contains the names of all the patients in the Sanatorium arranged in alphabetical order.

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CHART No. 4—PATIENTS HISTORY AND PAST ASSIGNMENTS.

Date of Admission	Stage	Name	Age	Previous Occupation	Present Occupation	Weight on Admission	Present Weight	Sputum	Week Ending Jan. 5th*

*Note—Columns for successive weeks covering period of three (3) months follow in the chart that is kept on file in the office of the Physician in Charge.

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SUMMARY OF VITAL STATISTICS FOR THE MONTH OF DECEMBER, 1919.

The health of the city as reflected in the death rate during the month was exceptionally good, the low rate of 11.19 per 1,000 of the population constituting the lowest death rate for this particular month that has ever occurred since the organization of the Board of Health in 1866. This low rate is all the more remarkable by reason of the fact that the temperature during the month was considerably below the normal, the mean temperature for the month being 30, as compared with a normal temperature of 34.4. It will be well to remember that in December, 1918, we still had with us the pan-epidemic of influenza, which exacted such a tremendous toll of lives in not only our community, but everywhere in the wide world. In December, 1918, we had 3,435 deaths reported from influenza and pneumonia, as compared with 735 deaths from these two causes in the month just closed—a decrease of 1,700 deaths. It would thus be manifestly unfair to make comparison of the mortality of December, 1919, with that of 1918 except by way of contrast. A much fairer comparison would be to show the differences between the mortality for the month and the mortality for the five-year average of December previous to 1918 corrected to correspond with the increase in the population. It is thus seen that in December, 1919, there were 5,705 deaths reported from all causes, as against 7,202 in the corresponding month of the quinquennium 1913 to 1917, inclusive.

Only 12 deaths were reported from typhoid fever, as compared with an average of 23; 5 deaths from scarlet fever, as compared with an average of 15; 497 deaths from pulmonary tuberculosis, as compared with an average of 804; 51 from other forms of tuberculosis, as compared with 91; 974 from organic heart disease, as compared with 1,097; 42 deaths from influenza, as compared with 61; 400 deaths from lobar pneumonia, as compared with 743; 293 from broncho pneumonia, as compared with 467; 33 deaths from cirrhosis of the liver, as compared with 67; 466 deaths from Bright's disease, as compared with 608; congenital debility and malformations, 335, as compared with 401; accidental deaths, 336, as compared with 339; homicide, 14, as compared with 25; suicide, 54, as compared with 79. It is thus seen that the great saving of lives was reflected chiefly among the following diseases: tuberculosis of the lungs, other forms of tuberculosis, pneumonias, and chronic organic diseases of the heart and of the kidneys. Undoubtedly the pan-epidemic of influenza which prevailed from October, 1918, to May, 1919, had a determining influence upon the mortality for the months of October, November and December of 1919 by an elimination, especially of persons susceptible to the acute respiratory infections, and of persons invalided from chronic degenerative diseases. A curious incident of the pan-epidemic of influenza was the apparent inherent resisting power to it shown by persons suffering from pulmonary tuberculosis, the epidemic failing to affect unfavorably persons suffering from this disease. On the other hand, a most important factor in the decreased mortality from this disease during the month, as well as during the months previous to December, was the prosperous condition of the city, an increase in wages being the rule with a consequently increased consumption of food.

The few diseases that showed increases, as compared with the quinquennium average of 1913 to 1917, inclusive, were diphtheria and croup and cancer.

There were 68 infants under one year of age who died out of every 1,000 during the month, as compared with a rate of 89 per 1,000 children born in the corresponding month of 1918.

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Morbidity Statistics.

The infectious diseases of childhood were considerably above the experience of 1918, there having been 3,444 cases of measles reported, as against 76; 537 cases of scarlet fever, as against 364; 440 of whooping cough, as against 58; 1,494 of diphtheria, as against 1,112; syphilis showed evidence of more complete reporting by physicians, there having been 1,540 cases reported, as against 944; 249 cases of influenza, as against 6,149 cases in December, 1918; 1,176 cases of pneumonia, as against 2,757.

There were 11,823 births reported during the month, with a rate of 23.20, as compared with 10,018 births reported in December, 1918, with a birth rate of 20.07.

There were 6,498 marriages reported, with a rate of 12.75, as compared with 5,000 marriages and a rate of 10.03 in 1918.

Deaths of non-residents occurred to the number of 152 in the city during the month. If these deaths be deducted from the mortality balance it would leave a rate of 10.90 per 1,000 of the population.

POPULATION, MARRIAGES, BIRTHS AND DEATHS, DECEMBER, 1919.

Boroughs.	Population U. S. Census April 15, 1910.	Estimated Population July 1, 1919.	Certificates Received and Tabulated.			Rate per 1,000 Based on Department Estimate.			Corrected Death Rate. **	Corr'td Death Rate Corresp'g Month 1918.
			Marriages	B'ths	* D'ths	Marriages.	B'ths.	D'ths.		
Manhattan	2,331,542	2,780,485	3,963	5,240	2,692	16.80	22.21	11.41	11.09	14.73
The Bronx.	430,980	645,894	529	1,318	660	9.65	24.04	12.04	11.97	15 86
Brooklyn..	1,634,351	2,070,539	1.618	4,199	1,815	9.21	23.90	10.33	10 86	15 09
Queens....	284,041	406,236	302	817	393	8.76	23.70	11.40	11.74	16.46
Richmond.	85,969	103,640	86	249	145	9.78	28.31	16.48	13.64	20.50
N. Y. City.	4,766,883	6,006,794	6,498	11,823	5,705	12 75	23.20	11.19	.....	15.19

*Includes 152 deaths of non-residents of the city, which, if deducted, would give a death rate for the city of 10 90 per 1,000.

**Corrected by redistributing deaths according to borough of residence.

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REGISTERED MORTALITY FROM PRINCIPAL CAUSES.

DECEMBER, 1919.

	Manhattan.		The Bronx.		Brooklyn.		Queens.		Richmond.		City of New York.	
	Dec.		Dec.		Dec.		Dec.		Dec.		Dec.	
	1919	1918	1919	1918	1919	1918	1919	1918	1919	1918	1919	1918
Total, all causes	2,616	3,415	656	838	1,908	2,591	405	549	120	177	5,705	7,570
1. Typhoid Fever	5	7	1	1	4	2	1	...	1	...	12	10
3. Malarial Fever	....	....	...	...	....	....	...	...	...	...	....	....
4. Typhus Fever	....	....	...	...	....	....	...	...	...	...	....	....
5. Measles	55	2	4	...	4	3	4	...	1	...	68	5
6. Scarlet Fever	2	1	...	2	3	4	..	...	...	...	5	7
7. Whooping Cough	8	5	6	1	6	3	5	1	2	1	27	11
8. Diphtheria and Croup	55	51	14	19	37	30	20	19	5	...	131	119
9. Influenza	16	388	8	118	17	301	1	94	...	15	42	916
10. Cholera Nostras	....	....	...	...	....	....	...	...	...	...	...	...
11. Poliomyelitis	....	....	...	...	....	....	...	...	...	...	...	...
12. Other Epidemic Diseases	2	4	1	2	6	3	..	...	...	..	9	9
13. Tuberculosis Pulmonalis	245	305	64	61	154	204	26	46	7	19	496	635
14. Tuberculosis Meningitis	11	22	2	6	7	8	2	3	2	3	24	42
15. Other forms of Tuberculosis	20	25	3	3	14	17	...	2	...	...	37	47
16. Cancer, Malignant Tumor	222	196	67	52	148	151	38	20	9	9	484	428
17. Simple Meningitis	12	21	2	4	7	9	2	1	...	2	23	37
Of which												
17a. Cerebro-Spinal Mningit is	5	10	1	1	4	4	...	...	...	2	10	17
18. Apoplexy and Softening of the Brain	35	53	5	6	15	31	7	2	3	4	65	96
19. Organic Heart Diseases	396	427	135	121	368	373	64	61	11	25	974	1,007
20. Acute Bronchitis	24	30	1	2	18	24	3	6	...	...	46	62
21. Chronic Bronchitis	7	6	4	3	5	1	...	1	...	...	16	11
22. Pneumonia (exc. Broncho Pneumonia)	174	383	58	93	140	318	20	70	8	31	400	895
22a. Broncho Pneumonia	137	324	28	58	92	200	30	31	6	11	293	624
23. Other Respiratory Diseases	18	14	5	4	16	25	3	7	...	2	42	52
24. Diseases of the Stomach (Cancer excepted)	21	15	2	7	11	13	...	6	1	1	35	42
25. Diarrhoeal Diseases (under 5 years)	47	53	14	13	43	54	8	6	...	2	112	128
26. Appendicitis and Typhlitis	18	18	5	9	21	13	4	5	...	2	48	47
27. Hernia, Intestinal Obstruction	27	20	6	9	13	18	2	12	1	1	49	60
28. Cirrhosis of Liver	17	14	3	2	11	10	1	2	1	...	33	28
29. Bright's Disease and Nephritis	178	188	35	38	195	178	43	31	15	12	466	447
30. Diseases of Women (not Cancer)	12	10	3	6	8	7	1	3	...	...	24	26
31. Puerperal Septicaemia	3	7	3	...	1	4	1	...	...	1	8	12
32. Other Puerperal Diseases	16	12	7	2	11	20	3	4	...	...	37	38
33. Congenital Debility and Malformations	134	151	41	47	119	132	27	21	14	6	335	357
34. Old Age	7	13	4	3	6	8	1	3	1	1	19	28
35. Violent Deaths	203	173	15	32	103	124	18	20	11	10	350	359
a. Sunstroke	....	....	...	...	....	....	...	...	...	...	....	....
b. Other Accidents	194	162	15	31	99	114	18	18	10	8	336	333
c. Homicide	9	11	...	1	4	10	...	2	1	2	14	26
36. Suicide	35	30	2	10	16	16	...	7	1	3	54	66
37. All other causes	450	445	108	104	286	286	70	63	20	16	934	914
38. Ill-defined causes	4	2	...	...	3	1	...	2	...	...	7	5

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REGISTERED MORTALITY FROM ALL CAUSES AND CERTAIN INFECTIOUS DISEASES, BY WARDS, DECEMBER, 1919.

BOROUGH OF MANHATTAN.

Wards.	Area in Acres.	Population U. S. Census 1910.	Number of Persons to the Acre.	Typhoid Fever.	Smallpox.	Measles.	Scarlet Fever.	Diphtheria and Croup.	Pulmonary Tuberculosis.	Lobar Pneumonia.	Broncho-Pneumonia.	Diarrhoeal Diseases.	All Causes.	Deaths of Children Under 5 Years.
1	154.0	9,750	63.0	..	..	1	..	..	7	2	..	..	31	1
2	81.0	933	11.5	..	..	..	..	..	..	..	..	..	3	..
3	95.0	1,915	20.2	..	..	..	..	..	..	..	..	..	5	..
4	83.0	21,336	257.1	..	..	2	..	..	1	4	3	2	32	12
5	168.0	5,666	33.7	..	..	..	..	..	1	1	..	..	7	..
6	86.0	19,670	228.7	..	..	2	..	1	4	3	4	3	30	8
7	198.0	102,101	515.6	1	..	7	..	3	6	5	7	2	88	34
8	183.0	33,182	181.4	..	..	3	..	..	3	1	..	1	38	13
9	322.0	64,909	201.6	..	..	2	..	5	11	8	3	..	93	16
10	110.0	66,439	604.0	..	..	..	..	1	1	1	1	1	30	9
11	196.0	136,548	696.7	..	..	1	..	1	7	5	4	..	51	15
12	6,154.0	806,648	131.1	3	..	13	..	11	84	68	42	19	936	180
13	107.0	64,651	604.3	..	..	1	..	2	2	..	3	..	35	9
14	96.0	38,321	399.3	..	..	1	..	2	6	10	2	1	48	17
15	198.0	30,584	154.5	..	..	1	..	..	3	..	..	1	33	4
16	349.0	55,926	160.2	..	..	..	..	1	10	3	4	..	82	14
17	331.0	172,334	520.6	..	..	14	1	2	16	16	15	4	198	60
18	450.0	62,821	139.6	1	..	3	1	5	6	5	11	1	98	31
19	1,481.0	292,950	197.7	..	..	4	..	13	29	14	19	7	332	71
20	444.0	73,308	165.1	..	..	..	..	..	5	5	6	3	71	12
21	411.0	62,345	151.7	..	..	..	..	1	12	7	2	2	96	19
22	1,529.0	209,154	136.8	..	..	..	..	7	31	16	11	4	279	45
Total.....	13,226.0	2,331,491	176.3	5	..	55	2	55	245	174	137	51	2,616	570

BOROUGH OF BROOKLYN.

1	233.0	21,851	93.8	..	..	..	..	..	2	..	..	2	28	6
2	97.7	6,894	70.6	..	..	..	..	..	..	1	..	..	2	1
3	161.4	15,910	98.6	..	..	..	..	..	4	2	1	..	21	4
4	111.3	10,477	94.1	..	..	..	..	..	2	..	..	1	8	2
5	119.4	19,401	162.5	..	..	..	..	..	..	2	..	2	13	3
6	302.9	46,437	153.3	..	..	..	..	4	5	6	4	3	58	13
7	458.5	44,037	96.0	..	..	..	..	..	1	6	4	1	49	10
8	1,843.2	82,687	44.9	..	..	..	..	..	3	3	2	..	42	13
9	623.6	50,501	81.0	..	..	..	..	..	6	5	2	1	64	14
10	318.7	41,238	129.4	..	..	..	..	2	4	2	4	..	43	13
11	252.6	21,659	85.7	..	..	..	..	..	5	3	1	1	30	9
12	663.1	29,262	44.1	..	..	..	..	5	9	3	1	3	91	15
13	230.3	30,091	130.7	..	..	..	..	..	3	1	2	..	27	4
14	282.6	33,329	117.9	..	..	..	..	..	2	1	2	..	20	13
15	244.8	35,887	146.6	..	..	..	..	..	1	1	2	2	26	8
16	244.8	68,244	278.7	..	..	..	..	..	5	3	4	3	51	18
17	823.3	70,346	85.5	..	..	1	..	..	16	4	4	2	76	16
18	873.0	35,708	40.9	..	..	1	..	1	6	4	2	..	52	10
19	413.8	44,860	108.4	..	..	..	..	1	5	8	2	2	67	9
20	461.4	27,463	59.5	..	..	..	..	2	4	4	2	..	37	2
21	483.2	78,741	163.0	..	..	..	..	1	4	7	4	1	50	12
22	1,361.6	81,283	59.7	1	..	1	..	2	7	8	8	3	120	16
23	736.0	65,561	89.1	..	..	..	..	1	4	7	1	4	101	19
24	1,198.5	80,466	67.2	..	..	..	..	1	6	4	2	4	90	19
25	567.8	63,597	112.0	..	..	1	..	..	4	2	4	1	60	7
26	3,590.2	177,963	49.5	1	..	..	2	6	8	13	6	3	143	39
27	400.7	76,000	189.6	..	..	..	..	..	8	3	2	2	48	12
28	884.4	77,451	87.6	..	..	..	..	1	16	14	8	3	160	23
29	3,800.0	72,351	19.0	..	..	..	..	3	1	3	3	1	57	10
30	5,401.1	76,406	14.1	2	..	..	1	6	11	19	12	4	239	43
31	6,312.3	30,988	4.9	..	..	..	..	1	2	1	1	..	31	5
32	5,479.5	17,419	3.2	..	..	..	..	..	..	..	2	..	4	1
Total.....	38,977.8	1,634,508	41.9	4	..	4	3	37	154	140	92	49	1,908	389

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BOROUGH OF THE BRONX.

Wards.	Area in Acres.	Population, U. S. Census 1910.	Number of Persons to the Acre.	Typhoid Fever.	Smallpox.	Measles.	Scarlet Fever.	Diphtheria and Croup.	Pulmonary Tuberculosis.	Lobar Pneumonia.	Broncho-Pneumonia.	Diarrhoeal Diseases.	All Causes.	Deaths of Children Under 5 Years.
23	4,267.0	268,880	63.0	1	..	3	..	8	34	26	14	7	343	64
24	22,255.8	162,062	7.3	..	..	1	..	6	30	32	14	7	313	67
Total.	26,522.8	430,942	16.2	1	..	4	..	14	64	58	28	14	656	131

BOROUGH OF QUEENS.

1	4,650.0	61,763	13.3	..	..	3	..	4	6	4	12	4	98	27
2	14,700.0	105,219	7.2	..	..	1	..	3	5	7	9	2	106	23
3	22,000 0	37,171	1.7	1	..	..	..	6	2	2	2	1	71	17
4	36,600.0	67,412	1.8	..	..	..	..	7	13	4	6	2	115	22
5	3,770.0	12,476	3.3	..	..	..	..	..	..	3	1	..	15	2
Total.	81,720.0	284,041	3.5	1	..	4	..	20	26	20	30	9	405	91

BOROUGH OF RICHMOND.

1	3,340.0	27,201	8.1	..	..	..	..	1	6	4	3	..	42	9
2	4,130.0	16,871	4.1	1	..	..	..	1	..	1	3	..	23	4
3	10,050.0	19,812	2.0	..	..	1	..	2	1	2	..	..	30	10
4	8,180.0	10,662	1.3	..	..	..	..	1	..	..	..	..	16	3
5	10,900.0	11,423	1.0	..	..	..	..	..	..	1	..	..	9	2
Total.	36,600.0	85,969	2.3	1	..	1	..	5	7	8	6	..	120	28

DEATHS ACCORDING TO AGE GROUPS, DECEMBER, 1919.

Boroughs.	All Ages.	Under 1 Year.	1 Year and under 2.	Under 5 Years.	5-15 Years.	15-25 Years.	25-45 Years.	45-65 Years.	65 Years and over.	Colored.	Chinese.
Manhattan.	2,616	352	125	570	90	99	516	757	584	175	5
The Bronx..	656	97	15	131	20	34	107	199	165	2	..
Brooklyn...	1,908	275	48	389	81	104	314	548	472	50	1
Queens.....	405	60	14	91	25	24	42	126	97	6	..
Richmond..	120	16	5	28	7	6	14	40	25	2	..
City of N.Y.	5,705	800	207	1,209	223	267	993	1,670	1,343	235	6

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INFECTIOUS DISEASES.

Number of Cases Reported in the City of New York, by Boroughs, During December, 1919, and December, 1918.

	Manhattan.		The Bronx.		Brooklyn.		Queens.		Richmond.		City.	
	DECEMBER.		DECEMBER.		DECEMBER.		DECEMBER.		DECEMBER.		DECEMBER.	
	1919	1918	1919	1918	1919	1918	1919	1918	1919	1918	1919	1918
Typhoid Fever	24	23	1	5	13	23	3	3	...	2	41	56
Typhus Fever	....	....	....	....	....	....	...	...	...	...	....	....
Malaria	1	....	1	....	2	....	1	...	...	...	5	....
Small Pox	1	....	....	....	....	....	...	...	...	...	1	....
Measles	1,716	36	790	9	517	22	212	7	209	2	3,444	76
Scarlet Fever	183	135	80	72	232	125	31	30	11	2	537	364
Whooping Cough	130	25	51	7	192	21	50	3	17	2	440	58
Diphtheria and Croup	545	441	233	245	497	298	148	110	68	18	1,491	1,112
Leprosy	....	....	....	....	....	....	...	...	...	...	....	....
Mumps	183	48	49	9	66	23	19	...	23	...	340	80
German Measles	18	7	16	3	11	2	6	2	...	...	51	14
Chicken Pox	360	122	44	33	197	96	41	18	44	3	686	272
Glanders	....	....	....	....	....	....	...	...	...	...	....	....
Anthrax	....	....	....	....	1	....	...	...	...	...	1	....
Rabies	....	....	....	....	1	....	...	...	...	...	1	....
Tetanus	2	....	....	....	....	1	...	...	...	...	2	1
Pellagra	....	....	....	....	....	....	...	...	...	...	....	....
Pulmonary Tuberculosis	511	302	157	126	270	320	67	52	14	5	1,014	805
Other Tuberculous Diseases	....	....	....	....	....	....	...	...	...	...	....	....
Syphilis	906	673	110	52	470	201	41	14	13	4	1,540	944
Gonorrhoea	211	193	22	21	71	90	12	...	6	3	322	307
Cerebro-Spinal Meningitis	10	16	3	....	5	5	...	...	...	3		24
Poliomyelitis	3	....	....	....	....	2	...	...	...	...	3	2
Hookworm	....	....	....	....	....	....	...	...	...	...	....	....
Trichinosis	....	....	....	....	....	....	...	...	...	...	....	....
Influenza	95	2,568	37	798	96	1,956	12	673	9	154	249	6,149
Pneumonias	479	1,903	93	200	524	567	32	60	48	27	1,176	2,757
Total	5,378	6,492	1,687	1,580	3,165	3,752	670	972	462	225	11,362	13,021

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MONTHLY METEOROLOGICAL SUMMARY.

DECEMBER, 1919.

Date.	Temperature. (Degrees Fahrenheit.)				Relative Humidity. (Per Cent.)	Precipitation (Inches.)		Wind. (Miles per hour.)			Sunshine.
	Maximum.	Minimum.	Mean.	Departure of Mean from Normal.	8 a.m.	Rain.	Snow.	Average Velocity.	Prevailing Direction.	Maximum Velocity and Direction.	Number of Hours
M 1	41	28	34	— 4	58	0	0	20.0	W	44 NW	9.0
T 2	44	29	36	— 2	65	0	0	19.1	SW	48 NW	0
W 3	30	18	24	—13	57	0	0	21.9	NW	44 NW	9.4
T 4	31	17	24	—13	60	0	0	9.8	W	18 S	9.4
F 5	34	25	30	— 7	64	0	0	18.0	SW	25 N	3.9
S 6	44	29	36	0	67	.24	0	17.3	S	35 S	0.2
S 7	48	39	44	+ 8	98	.06	0	23.0	SW	46 NW	0.9
M 8	45	37	41	+ 5	77	.06	0	12.7	E	22 NE	0
T 9	52	42	47	+11	96	.42	0	12.5	SW	26 W	0
W 10	49	22	36	+ 1	82	.69	0	34.0	NW	72 NW	4.4
T 11	30	20	25	—10	50	0	0	13.2	NW	35 NW	6.7
F 12	40	29	34	— 1	91	.20	0	8.0	SW	20 SW	0
S 13	60	40	50	+15	98	.06	0	22.2	SW	31 SW	0
S 14	58	22	40	+ 6	92	.24	T	29.1	NW	47 NW	1.3
M 15	27	17	22	—12	56	T	T	31.4	W	50 W	6.7
T 16	24	13	18	—16	51	.01	0.3	24.0	W	48 NW	8.7
W 17	22	2	12	—22	85	.06	1.6	26.3	NW	52 NW	5.2
T 18	14	0	7	—27	65	0	0	9.6	NW	31 NW	2.6
F 19	25	12	18	—16	75	.12	2.0	13.1	NE	24 NE	0
S 20	31	17	24	— 9	77	0	0	10.2	N	19 N	6.1
S 21	32	24	28	— 5	65	T	T	10.1	E	20 E	1.7
M 22	40	30	35	+ 2	88	0	0	9.2	NE	14 E	4.3
T 23	45	28	36	+ 3	83	0	0	6.4	NE	15 NE	4.2
W 24	39	25	32	— 1	77	.24	1.9	16.8	NW	42 NW	0
T 25	29	17	23	—10	74	.01	0.1	25.6	N	42 NW	8.0
F 26	33	16	24	— 8	74	0	0	9.5	SW	17 S	3.1
S 27	39	30	34	+ 2	74	0	0	12.8	SW	22 W	0.2
S 28	41	22	32	0	83	0	0	18.3	NW	26 W	5.8
M 29	26	17	22	—10	67	0	0	12.1	N	23 N	7.2
T 30	37	18	28	— 4	90	12	2.0	22.3	NW	45 NW	3.7
W 31	39	29	34	+ 2	58	0	0	15.6	W	28 NW	4.4
Month	Mean 37.1	Mean 23.0	Mean 30.0	Blank	Mean 74	Total 2.53	Total 7.9	Mean. 17.2	Prev'l'g NW	Blank	Total 117.1
Normal	40.9	28.0	34.4	Blank	75	3.45	6.6	13.4	NW	Blank	Possible 287.3

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CONTENTS: THE NEW YORK CITY NARCOTIC CLINIC.
TREATMENT OF DRUG ADDICTION.

JUN 10 1920
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MONTHLY BULLETIN
OF THE
DEPARTMENT of HEALTH
CITY OF NEW YORK

Public health is purchasable. Within natural limitations a community can determine its own death rate.

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ROYAL S. COPELAND, M. D., Commissioner of Health.

VOL. X. FEBRUARY, 1920. No. 2

THE NEW YORK CITY NARCOTIC CLINIC
and
DIFFERING POINTS OF VIEW ON NARCOTIC ADDICTION

By S. DANA HUBBARD, M. D.,
Acting-Director, Bureau of Public Health Education.

The problem of narcotic addiction has been in the public eye for some time, and the differing points of view regarding narcotic addiction have been provocative of some very interesting discussion.

In the spring of last year, the Federal authorities having made several raids on trafficking physicians and druggists, an acute emergency was created whereby it was feared by some that a panic of these miserable unfortunates would ensue. These conditions caused the New York City Department of Health to open a narcotic relief clinic in order to study and examine into the subject of narcotic drug addictions.

The problem of narcotic drug addiction is somewhat to be compared with village gossip—but few know the actual facts—and it is extremely interesting to find how many peculiar and extravagant opinions are expressed regarding such mysteries. This is very applicable to the facts regarding drug habits.

Number of Drug Addicts in New York City.

Many opinions regarding the prevalence and frequency of drug addiction have been expressed. No doubt many of these statements are far from true. We do not know who the addicts are, nor how many there are of them, either here or elsewhere in this country. Why? From opinions expressed, and from the literature on this subject, we have been lead to believe that addiction was allocated with certain definite physical stigmata: pallor, emaciation, nervousness, apprehension, snuffling, needle puncture markings, and tatto skin evidences; but in actual experience with hundreds of acknowledged drug addicts, persons actually seeking their drug supply, we find, like the weather indications, all such signs failing.

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There are drug addicts constitutionally inferior, and superior; feeble minded, and strong minded; physically below, and above par; morally inferior, and superior. No one class of society seems, in our experience, to enjoy a monopoly in this practice. Our opinions, therefore, regarding the number of drug addicts, here and elsewhere about this country, have very naturally had to be revised. While it was the current opinion to think that they existed in vast numbers—estimated by some as one per cent. of the community, and even two and three per cent. by others—we, today, think that this is greatly over-estimated.

It was formerly held that drug addiction was so general and so frequent that if the law—the Harrison Act—was enforced, as it should be, a panic would be created by the immense numbers of addicts who would seek relief.

The efforts of the New York City Department of Health, actuated and urged by the Commissioner of Health, Dr. Royal S. Copeland, showed that this fear of the production of a panic was a false one. Our efforts were given wide publicity, and the cooperation of medical and scientific societies earnestly and zealously sought to help solve this problem. It might be added also that the raids initiated by the Federal authorities—arresting illicit prescribers and dispensers—together with the New York State Narcotic Commission requiring registration of all addicts in this locality have not occasioned any undue excitement among these individuals. We, naturally, must infer that the enormous numbers of drug addicts supposed to exist, in this vicinity at least (and it was supposed to be greater here than anywhere else) are mythical and untrue and that therefore the fear of a panic of these miserable unfortunates was negative.

From our experience with narcotic relief and registration in New York City, we now are of the opinion that the present law—the Harrison Act—should be strictly and uniformly enforced. To do so would bring these tipplers in drugs to the front, and would hurt no one, not even the users themselves. These opinions, while radical, are not given to belittle the opinions previously expressed by persons supposedly well-informed on this matter, but are the results of an actual practical and intimate working knowledge of this subject.

Character of Addicts.

It has been said that the experience in the Department of Health emergency narcotic clinic was unique; that the character of the addicts visiting this service was very exceptional. Possibly our experience dealt with an unusual feature of this problem, but from personal consultations with many acknowledged addicts—in all walks of life—journalists, ministers, writers, physicians, clergymen, teachers, business men, etc., seeking interpretation of the law's requirements, as it affected them individually—they being addicts—we naturally had an opportunity for first-hand information.

The arrest of several trafficking physicians and druggists for violating the narcotic laws caused the Department of Health to open a relief clinic, which began as an emergency and was expected, naturally, to be only a temporary expedient, but the necessity was so acute, and attracted so much attention from those interested, that the Commissioner of Health decided to continue it for some time, in order to study this subject and obtain data regarding this problem.

The Narcotic Clinic, 145 Worth Street, New York City, was opened April 10, 1919. The clinic ministered to those willing to become its patients. The acute enforcement of the narcotic law by the Federal authorities made trafficking physicians and druggists fearful to prescribe and dispense for their addicts, and this factor sent these persons to this public emergency clinic. They appeared to come from all stations of society, and seemed to represent a fair average of these habitués.

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We feel that we have had an unusually wide and peculiarly general experience with drug addicts of all classes—classes so large as to make us think that others' experience in this form of practice has not been nearly so extensive.

The public narcotic clinic is a new thing. In fact there are only a very few in existence and, if we may judge from our experience, they are not desirable, and do not satisfactorily deal with this problem. We have given the clinic a careful and thorough as well as a lengthy trial and we honestly believe it is unwise to maintain it longer.

The clinic has been found to possess all the objectionable features characteristic of the so-called "ambulatory" treatment, as practiced by the trafficking physicians, except one, the financial profit to a few physicians (about one-half of one per cent. of the doctors of this city) performing this character of service.

Length of Time Using Drug.

The average duration of our patients on the drug was 6 to 7 years—79 per cent. being under ten years' duration. This is interesting, because, when they drift from drug using, where next do they go?

Those who have studied and followed carefully the chronic alcoholic addict, know very accurately that he goes down, down, down, drifting from usefulness to idleness, from good to bad conduct, finally from health to disease, and indulgence foreshortens the life period by a high percentage. The ear-marks of chronic alcoholic indulgence are not pathognomonic, yet they are generally recognized in our precociously advanced cases of poverty, disease, and early death; in these there are indications, in very many instances, where the history of chronic alcoholic indulgence and the clinical phenomena correlate cause and effect. This, in our study of narcotic drug addiction, is not so obvious. In our institutions for the poor, the aged, and the feeble-minded, drug addicts are exceptional, in fact it might be safe to state that they are rare. Now, what becomes of these drug habitués? Our dead, found in public places, and our deaths by suicide, as well as our pauper dead, fail to indicate, as the cause of such endings, any connection with the habit of drug addiction. This drug indulgence must leave a mark on the system, in many instances, especially in the cases of those addicts using hypodermic needles—here the tattooing and abscess cicatrizations, while perhaps in many instances not positively indicative, yet, are so characteristic that it is felt certain that if one of these cases was found dead, the drug addiction marks would be quickly determined by either the Coroner or City Examiner, or last attending institutional physician, and these complicating facts noted in the final record.

Dr. Charles Norris, Chief Medical Examiner of New York City, advises us regarding such instances as follows:

Deaths from Over-dose of Narcotics, New York City.

January 1—*December* 1, 1919.

	Manhattan.	Bronx.	Brooklyn.	Queens.	Richmond.	Total.
Morphine	28	..	3	1	..	32
Heroin	12	..	1	..	..	13
Opium	3	1	2	..	..	6
Cocaine	..	..	1	..	..	1
Aggregate	43	1	7	1	..	52

Total number of deaths from all causes reported to Medical Examiner.... 10,828

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The doctor also states: "There is one thing that has impressed me in the morgue work in Manhattan, namely, the relative infrequency of finding marks of hypodermic areas of cicatrizations. I cannot tell you at the moment how many of the 43 cases had marks but they are comparatively few." In our experience at the clinic—where we permitted the addict, when he had obtained his supply, to administer his dose to himself—the unmistakable markings on the person appeared to be quite frequent, and of a permanent character. These, without doubt, would be easily discoverable upon a corpse.

Most—in fact 70 per cent.—of the addicts, in our clinic, are young people; they have had no really serious experiences—surely none sufficient to occasion a desire to escape all of life's responsibilities by recourse to the dreams of narcotic drugs; therefore the one and only conclusion that we can arrive at, is that the acquirement of this practice—drug addiction—is incident to propinquity, bad association, taken together with weak vacillating dispositions, making a successful combination in favor of the acquirement of such a habit. Being with companions who have those habits, they, in their curiosity, give it a trial (similar to the acquirement of cigarette smoking in our young) and soon have to travel the same road to their own regret.

"Free Masonry" of the Addict.

Another remarkable concomitant of which we knew but little, heretofore, was shown—the free-masonry of the drug addict. They know one another by association; but by name, not at all, perhaps a "nickname," or abbreviated first name, being the only appreciable recognizable fact of a connection between them. "May" knows "Ike," and "Shorty" knows "Whitey"; while "Smoke" pals with "The Duke"; and, as for homes, they have none. They meet in places convenient for secret conference, toilets being the most often selected, and in such dens of iniquity as will tolerate such lounging and loafing. Their hours are as irregular as those of a stray cat, and neither day nor night is of any particular consequence, save that the cover of darkness suits their convenience for obtaining a renewed supply of their drug. As for meals, they depend on the effect of the drug most often to assuage any hunger, but they will eat candy, particularly nut chocolate bars. For these, addicts all display a fondness, and when offered to them, will never be refused.

All that this class of drug addicts—the confirmed habitué—appears to care for is to have a supply of "dope," and a place where it can be obtained. Having this, he is as happy and contented, and as apparently comfortable as any blessed mortal on earth desires. Thirst he knows not. When a sensation develops, he regards that as a need for another "shot," and so every thing that would be natural in the usual daily life of the ordinary man, to him, is unnecessary.

Addicts confide in one another—they are loyal, in their own way, stealing from the weak or those that have it, to be in turn imposed upon by others in similar fashion. From their pals, in their set—for there is caste—and the hangers-on of such a group or tribe, they borrow even to the last cent, and it appears to be loaned willingly, even though knowing it may never be returned. If one loans to another, he, in turn, borrows from others more fortunate than himself. They are typical human parasites. The following is interesting as relating to this fellowship: A young fellow, unclean, ragged, and apparently in abject pain and misery, applied, got his "script" (slang for prescription) but on going to the pharmacy of the clinic found that the amount of money required to fill it was beyond his financial abilities; he dropped out of the waiting line, mingled with his more fortunate companions, borrowing a penny here and another there, until he made up the required amount. He then returned to the line and secured his supply. Then, as he went toward his retreat to take a "shot," he was accosted by one in lower depths, bent on borrowing; he gave his

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precious all and returned to borrow enough of the drug from his pals to meet his needs until he could secure another prescription, on the day following.

After one of these borrowing excursions, one of these less fortunate individuals approached one more fortunate and asked "for a part of a shot." The poor addict had his little outfit ready to take a dose; he was pale, anxious, and apparently suffering keenly. He pinched up his skin, turning and twisting the needle point, sent it home, slowly injecting the solution, and when about half accomplished, noticing the despair on his companion's face, he withdrew the needle, and turned his syringe over, half filled, to his pal in misery. The poor chap had felt that he needed a little, but also that he could divide with one who appeared to need it more than he, so he took sufficient to "set" him, and willingly passed over the outfit to his beseeching companion in misery. This beggar seized the outfit, jabbed the needle through clothing and all into his belly skin and slowly shot the contents, to the last drop, home.

Having witnessed this charitable and brotherly act, I waited and, when the outfit was returned, I had it refilled and returned to its owner. This chap dropped to his knees and kissed my shoes. I tried to restrain him, and told him the clinic was intended to aid and comfort those in need. Imagine my chagrin, to observe, on the following day, the same game practiced by others, clearly stamping this as a ruse, a frame-up, to obtain the drug without paying, by playing upon the emotions of those in charge. Persons that practice such deceptions to serve their selfish purposes are not "on the square," and cannot be trusted because they incite others to practice further impositions.

Another similar instance of imposition played upon the volunteer workers was the following: Early on opening the clinic, there appeared a lad, surely not over 20 years of age, who had the great misfortune to have had both legs cut off at the hip. He propelled himself by having a board strapped to his torso and attached to the bottom of this board was a pair of roller skates. In his hands he had a pair of wooden handles, like dumb-bells, which he would place on the ground and with a shove he would send himself rolling along faster than one could walk. He was alacrity itself, and agile as a cat. He got about gracefully, followed always by a white spitz dog of the toy type. Like master, the pup was very, very dirty. The boy in his crippled condition, accompanied by his faithful dog, naturally attracted attention as well as keen sympathy. This boy was not particularly pallid, nor emaciated, and, on examining him later, no needle marks were discovered. The addicts who snuffle the drug have a sniffling respiration—a constant catching of the breath on inhalation through the nose which, with the presence of excessive nasal secretion, gives a mucous rattle. This symptom was also absent in this case. We were certain that this cripple was not an addict. What was he? His connection was developed later. The clinic was always crowded—jammed was a better and more fitting description—but on this occasion it was unusually congested. Suddenly the crowd surged to a corner and, thinking some accident (an addict overcome through an over dose) had happened, the floor captain (a lady volunteer worker) went over to investigate, and returned stating that the roller skate cripple had had his dog stolen and was crying bitterly. The sympathy of the captain was aroused and, to comfort the boy, she passed the hat about the building and collected a neat sum of money. The money, naturally, consoled the chap, and he left the clinic with his tear ducts dry.

On opening the clinic, the following day, there was our little cripple and, lo! with him was his spitz dog. I approached him and said: "I thought that you had lost your dog?" "I did," he replied. "How did you get him back so quickly?" He said, "I heard a feller had him and I got my pal to go to him and buy him back—it cost me twenty-five dollars." The story seemed honest, but the price to redeem so inconse-

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quential a "mut" was unreasonable. The chap was marked for more careful observation. We permitted the boy to come and go freely, giving him his supply, and, owing to his crippled condition, he was advanced in the several lines, preference being given him at all times. This kindness was his undoing. One day, soon afterwards, our detectives brought in our little cripple, charging him with acting as a "bootlegger"—selling drugs. When brought into the consulting room he was searched, and, strapped to his back, resting on his roller skate board, was a dirty bag containing "coke decks" and sixty dollars in silver coins—in fact it was the tinkling of this pile of coin that exposed him. To arrest a cripple, on such a charge, in our quarters, where sanctuary had been proclaimed, would make others think that we had "framed" the boy and were not playing the game fair. We decided not to arrest him, but to try and get into his good graces, if he had any. The scheme worked. The little chap was not above par when it came to matching wits, so he was quickly and easily caught and confessed to being a "coke" peddler. Not being an addict, he was excluded from the use of the clinic, and later fell into the hands of the police. In his confession, he said that the dog story had always been successful, and that no one had ever before seen through it. He also told how it had always netted him from ten to twenty dollars a day. He said that, at first, his conscience had bothered him about gulling the ladies, but the money came so easily that, later, he never gave it a second thought, and, when he needed money he would go to some crowded place, hang around until known to have a dog and then a chum, on a signal, would secrete the pup and, the stage being set, he'd break out crying—using glycerine in his eyes to make the tears flow freely. With his dirty, wet face and his deformity he was able, as long as the crowd lasted, to get money from the gullible. As he had played the game so long, and so successfully, we had visions of a neat bank account set aside for the proverbial rainy day, but he gleefully informed us that he did not save anything. That when he found the gang hanging about. he would play craps, and that he was always unlucky, and soon lost his day's makings. He was asked how he accounted for his ill-luck, and he laughingly replied, "I guess the blokeys use ponies (loaded dice) on me." "Then why do you keep it up?" "If I didn't play, I'd lose me pals. They wouldn't have me hanging around, if I did not do as they do." This seemed to furnish another key to this problem. As clever as was this crippled chap, his pals knew how he made his money, so they considered it "only fair" to get it away from him for their purposes.

The display of wit and natural cunning by these chaps, to meet their selfish purposes, is positively uncanny. We believed that drug addiction sapped the memory and dulled the intelligence—with the experiences of dramatic cleverness exercised to extract the coin of the realm from the unwary, often times to use for gambling or to obtain a supply of "dope," naturally our opinion now is that indiscriminate largesse is exceedingly harmful to general public welfare. Without the drug, these individuals, male and female, appear listless, weary and apathetic, then as the misery becomes more acute they are restless, peevish, and distressingly irritable. One very peculiar and universal charactersitic is that they, one and all, are insistently selfish and self-concerned. For others they care not at all.

Another pathetic case of an addict devising ways and means to raise the necessary capital to continue the drug habit and which informingly demonstrates to what extremes one of them will go, is well illustrated in the following case: A young girl, small of stature, comely, sweet of face, and with a gentle manner, came to the clinic with this story: She worked in a large department store in New York City, in which there are several hundreds of girls employed. Her wages were $16 a week. She took 31 grains of heroin a day and paid fifty cents for each ten grain lot to the prescribing physician, and seven cents a grain to the druggist for dispensing; $10.50

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a week to the doctor, and $15.19 a week to the druggist—a total outlay of $25.69 a week on an income of $16, board, lodging, clothing and other necessaries still to be considered. How did she do it? She was asked, and her reply, with astonishing lack of shame, was: "Girls have a way of making money which men have not got."

Effect of Drug Addiction on the Public.

The emergency relief narcotic clinic has brought out a mass of material, from which it is possible to study this problem, heretofore more or less vaguely thought about, and on which there were but few statistical data.

Habits usually only affect the individual but, in drug addiction, indulgence appears to react on the community. The effect on the individual is in proportion to indulgence and the individual's physical and mental resistance. But the effect on the community is evidenced by debauching of its citizenry, and by increase of crime and anti-social vices. The extent also spreads like a pestilential disease.

There may be those who say drug addiction is a mysterious disease; that it creates a disease mechanism; that it is not a matter for the authorities, particularly for the Department of Health; that there are laws which are sufficient for the regulation of drug addiction. Our opinion is that this habit is not a mysterious disease; that from a purely scientific point of view it would be interesting to have more light on the problem of tolerance, but there is a very general and complete understanding of drug addiction from the therapeutic standpoint among all who have dealt with it in institutions. In our opinion, drug addiction is simply a degrading, debasing habit, and it is not necessary to consider this indulgence in any other light than an anti-social one, and that those who are charged with correcting and preventing such tendencies should be stimulated to do so to their utmost, and all efforts exerted in this direction should be free from restraint, absolutely unhampered, and that all physicians interested in the general welfare of the people should earnestly encourage such action.

There may be other views regarding the control and prevention of drug addiction, but we opine that this is the natural and sane one to be generally expressed. It can be safely said, without contradiction, that drug addiction, per se, is not a disease, nor to be so regarded any more than excessive indulgence in cigarettes (to which all of these addicts appear to be committed), or an over-indulgence in alcohol (which but few of them require). Experience in our clinic appears to indicate that drug addiction affects the human economy in about the same way as does any vicious abuse, excess, or bad practice, each attacking and weakening along the channels most susceptible.

Cocaine Addiction.

Some have expressed the thought that cocaine caused a condition in the system requiring its continuance; it has been learned that such is not a fact. On the contrary, cocaine is used as a stimulant or antidote to certain undesired after-effects of other drugs—to overcome the drowsy effects of morphia or heroin. When cocaine is used in combination with either morphia or heroin, the addicts say that the "day-after" feeling is not so depressing.

Cocaine does not produce in the system a need similar to that from the continued use of morphia. The cocaine habit is like the alcohol habit—a man may want the drug, but if he cannot get it he will, and can easily, do without it, and will not have any actual physical misery or distress. We judge, from the amount of these drugs used excessively by the uninformed drug addict, that excessive dosage is probably the reason for melancholic after-effect—misunderstood by the addict, and encouraged by the illicit prescriber and dispenser for purely financial reasons. These latter charge by the amount; the prescriber, usually 50 cents for each ten-grain prescription, and the druggist charges by the grain. We also learned that most of this unpleasant

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depression was obviated when the excessive dosage was avoided, and addicts who co-operated in this study quickly became aware of this fact and so reported—which was not only to their physical advantage and comfort but financially more economical.

Cocaine was distributed on the first day the clinic was operated, but on ascertaining the fact regarding its effect on the individual, it was immediately discontinued and not again prescribed or dispensed.

Clinic Dosage.

The practice of the clinic was not to prescribe for any new applicant an amount over 15 grains—10 grains being the usual amount. Reduction was by a gradual daily lessening of the amount prescribed; this was ½ grain on each alternating day. When the amount approached the "irreducible minimum"—an amount below which the addict would show the phenomena of deprivation, peevishness, irritability, nervousness—if there was no opportunity to put the addict in the hospital (for want of an available bed), this method was discontinued for such periods as would enable us to hold the addict until a vacancy occurred. It was found that some could be reduced to as low as 2 or 3 grains; some, however, showed unmistakable suffering when 6 to 8 grains was reached. Others, disloyal to the clinic and themselves, would, when deprived by the clinic, refuse to accept our regulation and would buy additional amounts outside.

The bed capacity of our hospitals amounted to about 500, so it was necessary, with a daily attendance at the clinic of 500 to 1,000, to hold on a waiting list a number which would have been entirely unnecessary had we been able to place them immediately under institutional control.

Drug Supply Obtained by Deception.

Many addicts endeavored to get from the clinic actually more than they themselves needed. First, it was natural to expect that it would be tried as the cost of the prescription had been obviated, and the drug was sold much below the general retail price—the price at drug stores was 7 to 11 cents a grain to the addict; while, at the clinic, the maximum price was 3 cents a grain and, later, this was reduced to 2 cents.

Some individuals would endeavor to deceive and actually would go through registration and examination in order to obtain the drug to sell to addicts at an advance of the clinic price. We found wives trying to get a supply in this way for absent husbands, and brothers trying to deceive to get the drug for a sister. This practice was difficult to detect, but the numerous instances actually found demonstrated conclusively to what an extreme persons will go to help an unfortunate member of the family, or an interested friend or pal. However, as we became better acquainted, many desisted voluntarily, and others would inform us of the deception being practiced on the clinic. It was mainly through endeavoring to obtain the good will and co-operation of the addicts themselves that much helpful saving work was effected.

Propinquity in the Dissemination of the Drug Habit.

The outfits used by the addicts, both male and female, their method of preparing the drug for use, and method of administration, as well as many other peculiarities of the addicts, indicate clearly personal association as the chief cause of this debasing habit.

As a physician, I thought that the person who "needled" himself used a physician's hypodermic outfit, but this did not follow. Here again we met with a practice, so unique and so frequent, that it was positive evidence that drug addiction was a practice incidental, almost entirely, to association. Instead of a hypodermic syringe,

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which but few possessed, there was used a rubber tipped pipette (such as the ordinary medicine dropper) and on this was placed a hypodermic needle, and the coupling made tight by wrapping with some thread. This pipette and hypodermic needle was the outfit in general use by the addicts. Some few would take a small medicine dropper, wrap the small end with a few turns of cigarette paper moistened with saliva and twist this into the screw end of a hypodermic needle. Such a medicine dropper is retailed at about 5 cents, and a needle is obtained for fifteen cents, while the cheapest glass hypodermic syringe costs, at wholesale, usually from thirty to fifty cents. Their method of inserting the needle into the skin was also unique. This was very different from the way an injection is given by a doctor or a nurse. The addict takes the outfit in one hand and holds it between thumb and finger, placing the point of the needle on the site selected. He twists and presses slowly until the skin is benumbed, when he continues until it has bored its way through the true skin and, when at the depth desired, he slowly presses the bulb and sends the "shot" home, maintaining pressure until all of the fluid is injected. The mechanical ingenuity of the addict was peculiarly interesting, and the unusual outfit made this phase of the study more than ordinarily interesting and informing. Again the methods of preparation of the drug were so similar and primitive as to indicate personal instruction. The injecting outfit described was supplemented by a spoon with its handle bent back on itself so as to enable one to place it on a surface without its toppling over. The tearing off of a piece of newspaper to make a dipper, to take the powder out of the box and place it on the spoon, was another method which showed personal instruction, and the passing of such practice from person to person.

The method of preparation was about as follows: The addict would select some place where he could prepare his "shot" undisturbed—usually some toilet—and quite often took the water necessary to make the solution from the toilet itself. He would unwrap a soiled and well-handled little bundle of newspaper, from which he would take his little primitive syringe, his box of "dope," a cigarette paper, his spoon, and a match with a little piece of very dirty cotton. He then proceeded to prepare his dose. The spoon was placed on the edge of the toilet seat, the cigarette paper was folded into a V, with which, as a dipper, he measured out the amount he desired to take. Then he would fill his little syringe, and empty this measured water into the bowl of the spoon. Then, with aid of the match, boil the solution. When boiling, he would place the point of the needle into the cotton, squeeze the bulb and suck up the solution entirely. The skin of the arm, the thigh, and sometimes the belly, would then be pinched up and he would inject, as described above. The dose having been taken, he would wrap his little bundle up, without washing or further cleaning, and then go on about his business. Time and again we warned them of the dangers of using water from the toilet, but it was ineffective, so we closed up the toilets. We gave them rooms for self administering their medicine, furnished with gas stove, clean water, tincture of iodine and glasses, but they would have nothing to do with such things, preferring their own method and instruments. Here again our former opinion of the lack of ingenuity of the addict and his resourcefulness must be reversed. This shows conclusively that when a thing has to be done, and these individuals are handicapped by the law and its officials, they can circumvent all, not only by making their own hypodermic but by finding a way to administer their dose in secrecy, undisturbed.

Disposition of the Drug Addict.

Having demonstrated certain peculiar conditions regarding the narcotic drug addict, with a study of several thousands, covering a long period, and after consultation with many well informed on this subject (and who were not in any way econom-

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ically concerned except for social betterment of individuals), we conclude that narcotic drug addiction serves no useful purpose; that there is no justifiable reason at all for its continuance, and that the certainty with which this indulgence benumbs and blunts moral fibre, the practice being indulged in the majority of instances (69 per cent.) by the young boy or girl, makes its control absolutely necessary. That the control is not a correctional problem from the prison viewpoint, but one for medical supervision. That ambulatory treatment is farcical and useless, and is only putting off what should be immediately done. Physicians should not be permitted, under guise of treatment, to prescribe narcotics for such indulgence. Laws should be so amended that the narcotic addict, when determined, should be sent by due process of commitment to a suitable institution and held there, until a medical officer considers it safe for him to return to society. That after-care should be in an open-air environment—a farm, or outdoor gymnasium, or recreational institute being preferable—and continued until the psychic phase is entirely passed, and the addict can again resume his place and maintain himself in society.

Narcotic indulgence in the young adult exists without adequate reason, and the mere fact that such a habit has been acquired innocently is not an adequate reason for condoning this fault. Our opinion therefore regarding treatment of these miserable unfortunates now seems to be in the order of reversal. Formerly many held the opinion that it was difficult, unsafe, and required expert care to cure an addict, but it is not so by any manner of means. A plan called by the addicts "cold turkey"—abrupt withdrawal (practiced in Kings County Hospital, and without a death)—is not only possible but practical. It does occasion some suffering, and the plan treated of in another article in this issue gives our method. We hold no brief for either plan, but we state with positiveness that the plans are simple, but to be successful absolute control of the addict in preventing renewal of supply is the essential factor.

From an experience with many hundreds, passing through our clinic and hospital, it is our firm opinion that entire withdrawal may, in many instances, be successfully performed. That all that is needed is to have the withdrawal process supervised by a physician, so that those who need medical care may get it when it is required.

Strict, adequate, and proper, as well as uniform enforcement of the law—the Harrison Act—throughout this city and country is now demanded, and is essential towards preventing recruits to these miserable ranks.

Conclusions.

Number of Addicts.

The estimate of one per cent. of our population addicted to the use of narcotic drug indulgence as a habit—addiction—is very likely greatly exaggerated.

Class of Addicts.

Instead of many persons being made narcotic drug users incident to improper prescribing by careless doctors, it is found that drug addiction spreads like a pestilence through association.

In a study of over 7,000 addicts in this city exemptions requested for persons ill of some malady numbered less than 250.

Physical Condition of Addicts.

Instead of drug addicts being of that thin, emaciated, starved, hollow-eyed, cadaverous type of individual, many—very many—physically appear normal.

Feeble Mindedness of Addicts.

Many, yes, very many of these unfortunates are easily determined as belonging to this group in one of its several degrees. Some are, however, of the constitutionally inferior type and many of these are of the underworld stripe.

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The mental condition of addicts adds impetus to the opinion that more recognition must be given in our schools to the boy or girl of the mentally inferior type, so that by special attention and training—oftentimes individual—many may be prevented from the acquirement of such a vicious habit.

Duration of Habit.

From our experience, few seem to continue the habit for a very long period—the vast majority of these cases seem to be under ten years and there are comparatively few longer than this period.

Acquirement of Habit.

This appears to vary with localities. Our experience points, in the great preponderance of instances, to bad and vicious associates, 69 per cent. from their own statements.

Raising the morale of our public assemblies for the young and making programs in our shops and factories may materially aid in preventing this reprehensible practice.

Efforts to prevent and avoid mental and physical fatigue in industry with a careful regard for opportunities for acquirement of this habit by the industrially employed is strongly indicated.

Results of Habit.

The practices of drug addicts to meet the demands of their depraved appetites causes financial embarrassment, and to meet these desires the addicts become immoral and anti-social. When in need of the drug or over-stimulated from indulgence all moral influence and self-control are lost.

These individuals either in need of the drug or under its stimulating influence are a distinct menace to society. They will commit the most revolting of crimes in cold blood. It is from the ranks of these that petty thieves are recruited.

Treatment.

Drug addiction is not a mysterious disease. From a purely scientific point of view it would be interesting to have more light on the problem of tolerance, but on therapeutic indications and possibilities there is but little difference of opinion.

Drug addicts, under careful medical and supervisory nursing, present no pathological condition—only a disturbed or perverted functioning.

The action of internal organs are inhibited or functionally disturbed, but, when these influences are removed and normal action permitted, this derangement quickly disappears.

It is our opinion that any form of cure can take an addict off his drug provided this is done promptly. This was done at Riverside Hospital, in 3 to 5 days, without discomfort to the patient.

From information obtained from the large number of addicts, who have come to our clinic, most of whom have taken various methods of cure, it may be concluded that all methods of withdrawal are equally efficacious and only differ in regard to the comfort of the addict while taking the cure. Aftercare is always essential.

Treatment of the narcotic drug addict by private physicians prescribing and druggists dispensing, while the individual is going about, is wrong. The giving of a narcotic drug into the possession of an addict for self administration should be forbidden. Until this is done by law, all honorable physicians should aid in stopping this vicious practice.

The case of drug addiction that can be cured by ambulatory treatment is the rare exception, and so unusual as to make one think it impossible.

Physicians generally are of the opinion that ambulatory treatment is not good practice, and few doctors use this form of treating addicts, so it is believed that those so doing must be either ignorant of proper methods, or do so in bad faith.

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Harrison Act Enforcement.

Our study of this problem in this city indicates, most positively, the necessity for the general and uniform enforcement of the statutes. There will be no panic or falling in the streets, or robbing of drug stores or crowding of physicians' offices by the addicts affected. If they cannot obtain a supply, they will reform, and it is certain that not a fatality will be recorded.

General Conclusion.

The work of reclaiming the narcotic drug addict in this vicinity at least—judging from those we have seen and helped—is more than worth while.

The clinic is not the solution—but it aids in bringing the secretive addict out of his lair. He becomes friendlily disposed and, deprived of his supply, he is willing to be cured.

Our experience, as indicated in the statistical data quoted, is that nearly 70 per cent. of the addicts are under 30 years of age, and have been less than ten years on their drug, and that comparatively few have any physical reason for indulging in the practice.

The physical condition of many of these youths, male and female, indicates that most of them can be saved and reformed into useful citizens. They are down, but are very far from being out.

No doubt, with suitable organization and funds to institutionalize and adequately and properly care for them, not only to effect withdrawal of drugs, but to rehabilitate by several months after-care in the open country, together with efforts to get the individuals away from bad and demoralizing associates, into new and more useful environments, many will revert to useful and normal lives.

Many of these addicts have never had a square deal, and only need a fair chance to change their ways. Already many of them have been returned to useful lives, and many more can be revamped with proper and necessary help.

With success in many instances, in spite of the disadvantages under which the clinic has operated and under which this study has been made, we report our experiences, that others may be induced to enter into this work, appreciating its difficulties and complexities, but knowing that success is possible, in many cases.

We are more than pleased with our efforts, and the results of these labors, and appreciate the cordial support and advice given so freely by all those who co-operated. It is impossible to name any of these persons, but we desire to hereby register our public appreciation of their aid and assistance.

With reduction of addiction, generally, the incidence of the abuse of drug tippling, especially in the industrial world, will make future prevention and control easier.

Many lectures to hundreds of persons have been given by the staff of the Bureau of Public Health Education and this publicity will no doubt deter many from taking up addiction through curiosity or ignorance.

Narcotic Emergency Clinic Statistical Analysis.

Report of the Apothecary.

April 10, 1919, to January 16, 1920.

Prescriptions Dispensed	289,362
Receipts	$75,940 27
Drugs Dispensed—	
Heroin, ounces	4,385 17/28
Morphine, ounces	1,215 14/28

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Report of the Director of Clinic.

General Classification—	
Males	5,882
Females	1,582
Total	7,464
Racial Grouping—	
White	6,429
Black	1,035
Total	7,464

Reasons Assigned by Addicts for Acquiring Habit.

Bad Associates	5,190	69%
Illness	1,994	26%
Other Causes	280	5%

Age Grouping (66% Under 30).

Age	15-19	20-24	25-29	30-34	35-39	40-50	Over 50	Total.
Number	743	2,142	2,218	1,155	766	365	75	7,464
Percentage	9	28	29	14	10	9	1	100

Duration of Habit (79% Under 10 Years).

Years	Under 1	1-5	5-10	10-15	Over 15	Total.
Number	272	2,796	2,838	1,103	461	7,464
Percentage	3	37	39	15	6	100

Nationality (Birthplace).

Australia	1	Ireland	231
Africa	1	Italy	190
Austria	26	Japan	11
Belgium	4	Mexico	7
Canada	88	Norway	1
Cuba	16	Roumania	320
China	41	Russia	710
Denmark	4	Spain	4
England	38	Scotland	7
France	9	Sweden	12
Germany	418	South America	4
Greece	112	United States	5,182
Holland	6	West Indies	17
Hungary	4	Total	7,464

Voluntary Commitment to Hospital.

Riverside Hospital	1,581
Metropolitan Hospital	78
Bellevue Hospital	36
Queensboro Hospital	32
Kings County Hospital	5
Workhouse Hospital	12
Total	*1,744

*23% of clinic patients.

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Occupation.			
Accountant	5	Driller	3
Actor	98	Driver	454
Actress	68	Druggist	1
Agent	25	Dyer	2
Appraiser	1	Electrician	78
Artist	5	Elevator operator	49
Assembler	5	Embalmer	1
Attendant	2	Engineer	9
Baker	12	Engraver	2
Barber	29	Factory worker	46
Bartender	17	Firemen	22
Bell boy	25	Fisherman	1
Bill poster	1	Float captain	6
Blacksmith	13	Floor polisher	1
Boilermaker	3	Florist	2
Bookbinder	7	Foreman	4
Bookkeeper	15	Forester	1
Bootblack	10	Furrier	8
Boxmaker	8	Garage washer	2
Brakeman	19	Gasfitter	1
Brass polisher	1	Glazier	6
Bricklayer	18	Grave digger	1
Bus boy	1	Guards	9
Butcher	20	Hatters	4
Butler	6	Helpers	130
Buyer	5	Horsemen	5
Cabinetmaker	1	Horseshoer	1
Candy maker	1	Housewife	356
Cashier	11	Housework	335
Carpenter	31	Iceman	3
Canvasser	9	Inspector	6
Car inspector	1	Interpreter	1
Chambermaid	2	Ironworker	30
Chauffeur	84	Janitor	17
Checker	11	Jeweler	3
Chemist	2	Jockey	1
Cigarmaker	4	Journalist	68
Cigarettemaker	1	Laborer	418
Clerk	302	Laundry	35
Conductor	28	Lithographer	3
Contractor	1	Longshoreman	87
Cook	39	Machinist	116
Crane operator	1	Managers	12
Cutter	14	Manicurist	9
Decorator	4	Maid, house	36
Demonstrator	2	Marine firemen	1
Dentist	1	Masons	3
Designer	2	Mechanics	85
Detectives	1	Merchants	33
Dockhand	1	Messengers	6
Dressmaker	16	Metal workers	27

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Milkman	1	Seamstress	15
Millwright	1	Shipbuilder	7
Miner	2	Shipping clerk	15
Minister	1	Shirt maker	1
Model	1	Shoe cutter	1
Musician	21	Shoemaker	13
Newsdealer	24	Shoeman	1
Nurse	15	Showman	..
Oiler	8	Sign painter	3
Operator	35	Song writer	1
Optical	1	Special officer	1
Orderly	1	Stableman	10
Packer	21	Steamfitter	61
Painter	66	Stenographer	11
Paperhanger	2	Stevedore	9
Peddler	66	Steward	10
Photographer	9	Student	5
Physician	5	Superintendent	1
Pianomaker	8	Syrupmaker	1
Piano mover	1	Tailor	34
Piano tuner	2	Theatrical	2
Picture framer	1	Teamster	12
Pipefitter	14	Telegrapher	6
Plasterer	6	Telephone operator	12
Plumber	73	Timekeeper	7
Porter	19	Tinsmith	8
Polisher	7	Trainman	1
Presser	1	Unemployed	29
Press feeder	9	Upholsterer	1
Printers	76	Usher	4
Real estate	..	Waiters	33
Reporter	4	Waitresses	4
Rigger	5	Watchman	195
Riveter	14	Watchmaker	1
Roofer	1	Weaver	4
Salesman	196	Window cleaner	5
Seaman	14		

TREATMENT OF DRUG ADDICTION AT RIVERSIDE HOSPITAL.

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The treatment of drug addiction, so far as the withdrawal of drug is concerned, is the minor part leading to a successful cure. Various treatments for withdrawal are used with more or less success. The only one with which I have had any large experience is the hyoscine anæsthesia treatment, which has been modified variously. It was necessary to use the safest and most efficient method and one that did not involve too cumbersome a routine. Although our method is basically routine so far as reduction, elimination and the final complete withdrawal and the giving of hyoscine is concerned, it is, at the same time, individual to the extent that patients are not

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reduced equally to a given amount of drug; nor is the hyoscine hydrobromide given at the same intervals of time or amount to each patient. This requires, in the hyoscine wards, a large personnel which is supplied by regular trained nurses, about one nurse for every three patients. The drug is withdrawn from fifty to one hundred patients weekly. The number of cases successfully treated to date is 809. The number of cases discharged as successfully treated is 525; cases awaiting treatment, 122.

Patients are admitted to the hospital through an examination room, where they are undressed and taken to a second room for a thorough cleansing and then passed to a third room, where hospital clothing is provided (pajamas, slippers, and bath robes). Patients are then sent to the Admission Building. It is here that a rapid reduction in their drug allowance takes place—no heroin is used—the patients being immediately switched to morphine. Each usually receives from five to six grains the first day, if taking large quantities of either heroin or morphine. At the end of the fifth day the quantity taken is anywhere from 1½ to 3 grains of morphine in 24 hours. During this reduction period, elimination is caused by the free use of cathartics, which are given on the fourth and sixth days. On the morning of the fifth day a saline is given, and on the morning of the seventh day, at 6, a large dose of castor oil, and the last dose of morphine at 6.15, before receiving the hyoscine treatment.

The cathartic used is a capsule or tablet containing: Calomel, gr. 2½; Powdered Rhubarb, gr. 2½; Powdered Ipecac, gr. ½; Atropine Sulphate, gr. 1/180; Strychnine Sulphate, gr. 1/30. One is given at 3, 6 and 9 p. m. The patient is transferred to the Hyoscine Wards on his seventh day after admission, and he is given the first dose of hyoscine the moment he becomes uncomfortable or shows withdrawal signs, usually 1/200 grain, and this is repeated at intervals frequent enough to keep up an anæsthesia corresponding to the first stage of an ether narcosis—the stage of excitement—they having a mild delirium, occasionally jerky muscular movements and, almost generally, a reduction in the pulse rate. This anæsthesia is kept up for 36 hours. If, during this period, the patient becomes very agitated (and at times a case becomes maniacal), we do not hesitate to give a dose of morphine. This does not, in any way, lengthen the duration of treatment.

Marked abstinence symptoms on withdrawal of drug are self limited to about 72 hours. We expect, and usually succeed, in having the hyoscine in the system carry them through the final 36 hours. The abstinence symptom most frequently seen, the day after treatment, is vomiting. If not too severe, or accompanied by other symptoms, such as pains, we pay no attention to it; if otherwise, we give a few more doses of hyoscine, either by mouth or hypodermically. These patients are called "laggards."

About the tenth day after admission, the treated patient finds himself in the Convalescent Building. Although he is much weakened, he is more or less up and around. Because of the muscular weakness and sleeplessness, he is at his worst as to craving the drug, and it is during this convalescent period he needs the most careful watching. He is mentally and physically weak and wants drug, and would not let a chance of getting it go by. He is given hypnotics, such as bromide, chloral, and veronal. If the pulse is weak, he is given spartein sulphate and strychnine, occasionally, combined with 1/40 grain apomorphine. These three, together, make a very soothing, stimulating hypodermic dose. After a week in the Convalescent Ward, the patient is sent to a dormitory building, and given some occupation in the activities of the Island. There, he gets no medicines of any kind, except for some intercurrent affection.

Regular diet is given up to the time of entering the Hyoscine Wards. Nothing but water is given while in the Hyoscine Wards. After that, regular food is allowed, as soon as patient is able to take it.

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Over 95 per cent. of the cases at Riverside are heroin takers, and a large percentage combine this drug with cocaine. As we see these addicts at Riverside Hospital, there exists individual cowardice and fear, and a feeling that you will not treat them humanely because they are drug addicts. They feel, inwardly, that their ability to "put things over" far exceeds that of others. This is largely seen in cocaine takers. All addicts think that their addiction is a little more excusable than that of any other addict, and, at the same time, they will relapse with little or no excuse, or one so flimsy that it sounds absurd.

It is this peculiar state of mind or craving, the pathology of which I cannot describe, of knowing he can throw his troubles (fancied or real) into oblivion, and substitute a certain kind of exhilaration by the use of the drug, which sticks the longest after the withdrawal of the narcotic, for how long it is impossible to say. The patient is physically, apparently, perfect, but suddenly he goes back to the drug. This is a condition of mind which was either a primary condition rendering him susceptible to the formation of a habit, or the condition of mind produced by the physiological effects of the long-continued use of drug. This condition may persist for a long time, and is undoubtedly the impelling influence which causes a reversion to drug taking. This tendency of the mind continually to revert to the drug, due to the impression made by the former use upon the memory cells of the brain, becomes more pronounced if the former patient knows he can get the drug or has hopes of getting it. To take away all possibility of getting the drug is, in my opinion, the only certain way of getting a cure. The longer you can keep this possibility and hope away from one, the better the chance of cure. The memories stored up in the brain, of what the drug will do for him in the way of relieving worries, pain, exhaustion, are fixed, and I do not believe they ever disappear. In other words, under certain conditions, a man who has once been an habitue is in danger of relapse, even though he has not had morphine for years.

It is my personal opinion that we are putting the cart before the horse in attempting to cure cases when they are able to procure the drug after treatment. I believe a very large percentage will relapse sooner or later, regardless of the form of treatment they have had, if it is possible to procure their drug. I am willing to admit, however, that proper treatment, covering a protracted period of time, will result in more cures than slip-shod, stereotyped methods, used by many advertising institutions for pecuniary reasons. The treatment at Riverside Hospital withdraws the drug, builds up physically, and we hope a large number will stay cured.

In this paper I have eliminated the administrative part of running the hospital, and this is a very important and difficult part in a place of this kind and must be considered an essential part in all treatment.

I wish to emphasize the following in this paper: Marked withdrawal symptoms last for 72 hours, no matter what the treatment. Giving of small doses of hyoscine (preferably by mouth) to cases giving marked withdrawal symptoms, after 36 hours' treatment, is important. The percentage of these cases is less than 1. The giving of morphine (gr. ¼) is most useful to allay very active delirium during hyoscine medication, without lengthening the time of treatment.

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SUMMARY OF VITAL STATISTICS FOR THE MONTH OF JANUARY, 1920.

The reappearance of the epidemic of influenza that played such havoc in the fall and winter of 1918 affected considerably the morbidity and the mortality lists for the month, especially the former, as there were 33,559 cases of influenza reported during the month, as against 13,324 in the corresponding period of 1919. The total number of deaths reported during the month just closed was 8,331, with a rate of 15.98, as compared with 10,391 deaths, and a rate of 20.38, in the corresponding month of 1919, and 7,960 deaths, and a rate of 15.97 in January, 1918. Influenza did not affect the mortality of the city until January 23, upon which date there was an increase of 32 deaths from influenza and pneumonia combined, over the normal average—on that date there being 102 deaths reported from these causes, as against 70 deaths on the immediately preceding day. The number of deaths increased gradually until February 4, upon which 379 deaths were reported from these two causes, the mortality, then, gradually lessening until, at the date of the present writing, February 20, it fell to 124. The mortality lists for February up to the 20th, however, show a considerable increase as compared with former years.

During January, 1920, there were 710 deaths reported from influenza; 1,000 deaths from lobar-pneumonia; 677 deaths from broncho-pneumonia, making a total number of 2,387 deaths from these causes, as compared with 1,967 deaths from influenza, 1,557 deaths from lobar-pneumonia, and 1,005 deaths from broncho-pneumonia, a total of 4,529 deaths during the corresponding month of 1919. The comparison is not a fit one as, during January, 1919, a recrudescence of the pandemic of October, 1918, was in full swing, so that the above comparison is one for a period of time during which the infection was at its height with the beginning of an epidemic appearing late in the month.

Another noteworthy feature of the month's mortality was the presence of a severe epidemic of measles, there having been 111 deaths reported, as against 7 in 1919, and 85 in 1918. Whooping-cough was present to considerable extent, there having been 42 deaths reported therefrom, as against 9 in 1919, and 67 in 1918. A very pronounced decrease in the mortality from tuberculosis was recorded during the month, 599 deaths being attributed to this cause, as against 821 in 1919, and 842 in 1918. The deaths attributed to other forms of tuberculosis, during the month numbered 83, as against 103 in 1919 and 131 in 1918. A noteworthy decrease was noted in the number of deaths reported from accidents, there having been 347, as against 365 in 1919, and 440 in 1918.

Viewed from the point of age grouping, there were 125 fewer deaths under five years of age; 69 fewer deaths between 5 and 15 years of age; 460 fewer between 15 and 25 years of age; 1,390 fewer between 25 and 45; 151 fewer between 45 and 65 years of age; at the ages of 65 years and over, there were 135 more deaths reported. It is evident that the epidemic prevailing in January, 1919, affected adversely the mortality between the age groups of 15 to 45.

There were 244 deaths of non-residents reported during the month, which, if deducted from the total mortality, would give a death rate for the city of 15.51 per 1,000 of the population.

The number of births reported during the month was 11,280, 528 more than in the corresponding month of 1919.

The number of marriages reported during the month was 5,829, as compared with 5,943 in January, 1919, a decrease of 116.

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POPULATION, MARRIAGES, BIRTHS AND DEATHS, JANUARY, 1920.

Boroughs.	Population U. S. Census April 15, 1910.	Estimated Population July 1, 1920.	Certificates Received and Tabulated.			Rate per 1,000 Based on Department Estimate.			Corrected Death Rate. **	Corr'td Death Rate Correspon'g Month 1919.
			Marriages	B'ths	* D'ths	Marriages.	B'ths.	D'ths.		
Manhattan	2,331,542	2,829,239	3,361	4,782	3,892	14.00	19.92	16.21	15.87	19.16
The Bronx.	430,980	669,233	616	1,204	956	10.84	21.19	16.83	16.51	21.89
Brooklyn..	1,634,351	2,117,908	1,555	4,249	2,690	8.65	23.64	14.96	15.53	20 94
Queens....	284,041	419,506	223	827	582	6.26	23.23	16.34	17.13	21.38
Richmond.	85,969	105,559	74	218	211	8.26	24.33	23.55	20.20	28.65
N. Y. City.	4,766,883	6,141.445	5,829	11,280	8,331	11.18	21.64	15.98	.....	20.38

*Includes 244 deaths of non-residents of the city, which, if deducted, would give a death rate for the city of 15 51 per 1,000.

**Corrected by redistributing deaths according to borough of residence.

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REGISTERED MORTALITY FROM PRINCIPAL CAUSES.

JANUARY, 1920.

	Manhattan.		The Bronx.		Brooklyn.		Queens.		Richmond.		City of New York.		
	Jan.		Jan.		Jan.		Jan.		Jan.		Jan.		
	1920	1919	1920	1919	1920	1919	1920	1919	1920	1919	1920	1919	1918
Total, all causes	3811	4522	938	1200	2791	3680	610	737	181	252	8331	10391	7960
1. Typhoid Fever	3	7	1	...	3	2	...	...	...	1	7	10	6
3. Malarial Fever	....	1	...	...	....	....	...	...	...	...	....	1	1
4. Typhus Fever	....	....	...	...	....	....	...	...	...	...	....	....	....
5. Measles	67	1	18	1	16	5	6	...	4	...	111	7	85
6. Scarlet Fever	3	5	1	3	7	8	1	1	...	...	12	17	30
7. Whooping Cough	16	5	6	...	16	4	4	...	...	...	42	9	67
8. Diphtheria and Croup	52	59	16	16	49	47	14	10	5	2	136	134	112
9. Influenza	340	795	85	275	215	681	52	159	18	57	710	1967	72
10. Cholera Nostras	....	....	...	...		....	...	...	...	...	....	...	....
11. Poliomyelitis	1	....	...	...	1	....	...	...	...	...	2	...	....
12. Other Epidemic Diseases	17	14	3	1	9	5	...	...	...	...	29	20	32
13. Tuberculosis Pulmonalis	289	400	83	101	179	253	43	51	5	16	599	821	842
14. Tuberculosis Meningitis	28	31	4	3	17	16	3	10	1	...	53	60	64
15. Other forms of Tuberculosis	14	23	7	3	6	10	3	3	...	4	30	43	67
16. Cancer, Malignant Tumor	229	203	56	60	131	152	29	27	12	13	457	455	434
17. Simple Meningitis	16	19	5	3	16	11	3	3	2	1	42	37	31
Of which													
17a. Cerebro-Spinal Mningitis	7	14	..	...	8	4	...	1	...	...	15	19	11
18. Apoplexy and Softening of the Brain	37	59	9	10	18	34	2	13	2	1	68	117	85
19. Organic Heart Diseases	498	477	139	105	499	467	105	66	20	21	1261	1136	1263
20. Acute Bronchitis	32	40	5	3	47	48	10	11	4	2	98	104	118
21. Chronic Bronchitis	2	7	1	2	11	7	1	1	...	1	15	18	16
22. Pneumonia (exc. Broncho. Pneumonia)	480	650	117	173	316	560	67	123	20	51	1000	1557	945
22a. Broncho Pneumonia	357	461	63	142	213	350	32	35	12	17	677	1005	527
23. Other Respiratory Diseases	28	24	11	8	22	25	5	5	...	1	66	63	61
24. Diseases of the Stomach (Cancer excepted)	15	16	5	4	6	9	5	3	1	...	32	32	46
25. Diarrhoeal Diseases (under 5 years)	55	45	14	11	62	50	8	11	2	3	141	120	126
26. Appendicitis Typhlitis	18	28	8	13	21	14	7	6	...	...	54	61	51
27. Hernia, Intestinal Obstruct	29	32	6	3	14	22	3	8	2	...	54	65	69
28. Cirrhosis of Liver	26	15	2	4	10	9	3	3	1	1	42	32	44
29. Bright's Disease and Nephritis	205	194	46	42	242	221	52	45	14	8	559	510	655
30. Diseases of Women (not Cancer)	16	9	2	..	13	17	2	1	1	...	34	27	23
31. Puerperal Septicaemia	4	2	2		8	1	...	2	...	...	14	9	22
32. Other Puerperal Diseases	23	15	3		23	20	11	...	2	...	62	41	34
33. Congenital Debility and Malformations	159	166	47	50	107	159	33	39	6	10	352	424	392
34. Old Age	26	10	5	5	9	13	2	3	...	2	42	33	21
35. Violent Deaths	184	222	30	21	125	116	21	28	8	13	368	400	453
a. Sunstroke	....	....	...	...	....	....	...	...	...	...	....	...	....
b. Other Accidents	171	201	29	20	118	110	21	22	8	12	347	365	440
c. Homicide	13	21	1	1	7	6	...	6	...	1	21	35	13
36. Suicide	28	30	9	11	12	14	3	2	2	...	54	57	70
37. All other causes	505	453	129	116	347	328	80	68	37	26	1098	991	1095
38. Ill-defined causes	9	4	...	1	1	2	...	...	...	1	10	8	1

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REGISTERED MORTALITY FROM ALL CAUSES AND CERTAIN INFECTIOUS DISEASES, BY WARDS, JANUARY, 1920.

BOROUGH OF MANHATTAN.

Wards.	Area in Acres.	Population U.S. Census 1910.	Number of Persons to the Acre.	Typhoid Fever.	Smallpox.	Measles.	Scarlet Fever.	Diphtheria and Croup.	Pulmonary Tuberculosis.	Lobar Pneumonia.	Broncho-Pneumonia.	Diarrhoeal Diseases.	All Causes.	Deaths of Children Under 5 Years.
1	154.0	9,750	63.0	..	..	..	..	..	5	8	2	..	37	6
2	81.0	933	11.5	..	..	..	..	..	..	..	..	..	8	..
3	95.0	1,915	20.2	..	..	..	..	..	1	1	..	..	6	..
4	83.0	21,336	257.1	..	..	1	..	..	7	..	4	..	36	8
5	168.0	5,666	33.7	..	..	..	..	..	1	1	..	..	5	..
6	86.0	19,670	228.7	..	..	..	..	..	4	5	5	1	28	4
7	198.0	102,101	515.6	..	..	10	..	..	6	11	20	6	120	51
8	183.0	33,182	181.4	..	..	..	..	1	2	8	9	3	52	16
9	322.0	64,909	201.6	..	..	1	..	..	8	12	11	3	123	21
10	110.0	66,439	604.0	..	..	..	..	..	9	11	3	..	64	13
11	196.0	136,548	696.7	..	..	5	..	3	7	13	8	1	101	33
12	6,154.0	806,648	131.1	1	..	11	2	18	95	223	109	17	1437	286
13	107.0	64,651	604.3	..	..	4	..	..	3	5	6	1	48	14
14	96.0	38,321	399.3	1	..	4	1	5	3	8	8	4	83	30
15	198.0	30,584	154.5	..	..	..	..	2	5	3	7	..	47	10
16	349.0	55,926	160.2	1	..	2	..	1	7	14	9	1	122	18
17	331.0	172,334	520.6	..	..	7	..	4	15	26	38	8	250	76
18	450.0	62,821	139.6	..	..	5	..	2	11	15	12	2	125	29
19	1,481.0	292,950	197.7	..	..	14	..	5	39	40	41	9	450	94
20	444.0	73,308	165.1	..	..	..	..	3	16	17	15	1	141	20
21	411.0	62,345	151.7	..	..	..	..	2	11	14	15	1	134	22
22	1,529.0	209,154	136.8	..	..	3	..	6	34	45	35	5	394	52
Total.....	13,226.0	2,331,491	176.3	3	..	67	3	52	289	480	357	63	3811	803

BOROUGH OF BROOKLYN.

1	233.0	21,851	93.8	..	..	1	..	..	4	6	3	..	39	7
2	97.7	6,894	70.6	..	..	1	..	..	2	1	..	..	6	2
3	161.4	15,910	98.6	..	..	..	..	..	4	4	2	..	30	5
4	111.3	10,477	94.1	..	..	..	..	1	7	1	4	1	24	6
5	119.4	19,401	162.5	..	..	1	..	3	2	4	7	3	41	19
6	302.9	46,437	153.3	..	..	..	..	2	1	11	4	1	69	22
7	458.5	44,037	96.0	..	..	1	..	1	3	7	3	1	94	14
8	1,843.2	82,687	44.9	..	..	..	1	6	8	23	13	1	124	26
9	623.6	50,501	81.0	..	..	..	..	..	7	11	10	3	92	14
10	318.7	41,238	129.4	..	..	..	..	2	6	4	4	5	47	15
11	252.6	21,659	85.7	..	..	2	..	1	8	9	6	1	61	12
12	663.1	29,262	44.1	..	..	1	..	2	7	13	7	..	97	23
13	230.3	30,091	130.7	..	..	1	..	1	2	3	5	2	31	13
14	282.6	33,329	117.9	..	..	..	1	2	2	4	4	3	42	21
15	244.8	35,887	146.6	..	..	2	..	3	4	9	6	3	49	21
16	244.8	68,244	278.7	..	..	1	..	..	4	5	5	4	69	16
17	823.3	70,346	85.5	..	..	..	1	..	13	13	8	3	129	28
18	873.0	35,708	40.9	..	..	..	1	3	4	8	10	3	62	21
19	413.8	44,860	108.4	1	..	..	..	2	5	10	4	2	70	12
20	461.4	27,463	59.5	..	..	..	..	3	3	3	2	1	55	13
21	483.2	78,741	163.0	..	..	1	..	..	4	10	12	5	98	27
22	1,361.6	81,283	59.7	..	..	1	1	..	5	20	7	2	152	25
23	736.0	65,561	89.1	..	..	1	..	1	9	19	13	4	198	24
24	1,198.5	80,466	67.2	..	..	..	..	..	6	18	10	2	128	15
25	567.8	63,597	112.0	..	..	..	..	1	9	12	5	5	90	14
26	3,590.2	177,963	49.5	..	..	2	..	6	11	25	10	3	219	43
27	400.7	76,000	189.6	1	..	..	..	2	8	9	6	4	81	20
28	884.4	77,451	87.6	..	..	..	1	4	15	10	11	1	186	25
29	3,800.0	72,351	19.0	..	..	..	..	..	4	14	8	2	110	10
30	5,401.1	76,406	14.1	1	..	..	1	3	8	26	20	4	246	53
31	6,312.3	30,988	4.9	..	..	..	..	..	3	4	4	1	43	7
32	5,479.5	17,419	3.2	..	..	..	..	..	1	..	..	..	9	..
Total.....	38,977.8	1,634,508	41.9	3	..	16	7	49	179	316	213	70	2791	573

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BOROUGH OF THE BRONX.

Wards.	Area in Acres.	Population, U. S. Census 1910.	Number of Persons to the Acre.	Typhoid Fever.	Smallpox.	Measles.	Scarlet Fever.	Diphtheria and Croup.	Pulmonary Tuberculosis.	Lobar Pneumonia.	Broncho-Pneumonia.	Diarrhoeal Diseases.	All Causes.	Deaths of Children Under 5 Years.
23	4,267.0	268,880	63.0	..	..	12	..	10	47	62	31	8	496	103
24	22,255.8	162,062	7.3	1	..	6	1	6	36	55	32	8	442	89
Total.	26,522.8	430,942	16.2	1	..	18	1	16	83	117	63	16	938	192

BOROUGH OF QUEENS.

1	4,650.0	61,763	13.3	..	..	6	..	1	9	17	5	4	121	32
2	14,700.0	105,219	7.2	..	..	..	1	4	13	25	10	2	196	29
3	22,000 0	37,171	1.7	..	..	..	..	4	8	6	9	1	103	14
4	36,600.0	67,412	1.8	..	..	..	..	5	11	14	5	2	156	25
5	3,770.0	12,476	3.3	..	..	..	..	..	2	5	3	..	34	6
Total.	81,720.0	284,041	3.5	..	..	6	1	14	43	67	32	9	610	106

BOROUGH OF RICHMOND.

1	3,340.0	27,201	8.1	..	..	1	..	3	2	5	2	1	66	7
2	4,130.0	16,871	4.1	..	..	..	..	2	1	2	5	1	41	7
3	10,050.0	19,812	2.0	..	..	2	..	..	2	9	1	..	40	11
4	8,180.0	10,662	1.3	..	..	1	..	..	..	2	3	..	24	6
5	10,900.0	11,423	1.0	..	..	..	..	..	..	2	1	..	10	2
Total.	36,600.0	85,969	2.3	..	..	4	..	5	5	20	12	2	181	33

DEATHS ACCORDING TO AGE GROUPS, JANUARY, 1920

Boroughs.	All Ages.	Under 1 Year.	1 Year and under 2.	Under 5 Years.	5-15 Years.	15-25 Years.	25-45 Years.	45-65 Years.	65 Years and over.	Colored.	Chinese.
Manhattan.	3,811	479	182	803	113	273	882	1,027	713	247	12
The Bronx..	938	131	34	192	41	85	208	229	183	14	..
Brooklyn...	2,791	352	113	573	102	189	546	735	646	86	1
Queens.....	610	62	23	106	24	33	138	167	142	9	..
Richmond..	181	24	2	33	2	8	41	32	65	1	1
City of N.Y.	8,331	1,048	354	1,707	282	588	1,815	2,190	1,749	357	14

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INFECTIOUS DISEASES.

Number of Cases Reported in the City of New York, by Boroughs, During January, 1920, and January, 1919.

	Manhattan.		The Bronx.		Brooklyn.		Queens.		Richmond.		City.	
	JANUARY		JANUARY		JANUARY		JANUARY		JANUARY		JANUARY	
	1920	1919	1920	1919	1920	1919	1920	1919	1920	1919	1920	1919
Typhoid Fever	33	20	3	4	9	11	1	1	1	...	47	36
Typhus Fever	....	....	....	....	....	....	...	...	...	...	....	....
Malaria	2	1	....	....	1	....	...	...	...	...	3	1
Small Pox	....	1	....	....	....	....	...	...	...	...	....	1
Measles	3,650	104	1,818	10	1,688	21	423	8	177	3	7,756	146
Scarlet Fever	199	209	120	87	248	169	64	41	16	4	647	510
Whooping Cough	297	26	159	6	285	13	77	3	16	...	816	48
Diphtheria and Croup	563	548	203	244	515	412	177	99	34	24	1,492	1,327
Leprosy	....	1	....	1	....	1	....	...	...	...	....	3
Mumps	261	82	58	9	129	70	...	5	10	14	458	180
German Measles	46	9	19	3	28	3	...	3	3	...	96	18
Chicken Pox	412	156	82	28	205	164	...	48	27	18	726	414
Glanders	....	....	....	....	....	....	...	...	...	...	....	....
Anthrax	3	....	....	....	1	1	...	...	...	...	4	1
Rabies	....	....	....	....	1	....	...	...	...	...	1	....
Tetanus	1	....	....	....	....	1	...	...	...	...	1	1
Pellagra	....	....	....	....	....	....	...	...	...	...	....	....
Pulmonary Tuberculosis	586	567	98	118	230	527	31	35	12	23	957	1,270
Other Tuberculous Diseases	....	....	....	....	....	....	..	...	...	...	....	....
Syphilis	983	851	161	101	386	356	51	10	25	7	1,606	1,325
Gonorrhoea	118	173	48	24	147	80	23	7	9	1	345	285
Cerebro-Spinal Meningitis	11	19	4	1	8	11	1	2	...	2	24	35
Poliomyelitis	....	....	1	....	....	....	...	1	...	...	1	1
Hookworm	....	....	....	....	....	....	...	...	...	...	....	....
Trichinosis	1	....	....	....	....	....	...	...	...	...	1	....
Influenza	15,550	6,256	4,957	1,629	10,599	4,107	1,585	828	868	504	33,559	13,324
Pneumonias	3,395	1,342	574	220	2,346	1,012	223	207	177	136	6,715	3,417
Total	26,093	10,865	8,305	2,485	16,826	6,959	2,656	1,298	1,375	736	55,255	22,343

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MONTHLY METEOROLOGICAL SUMMARY.

JANUARY, 1920

Date.	Temperature. (Degrees Fahrenheit.)				Relative Humidity. (Per Cent.)	Precipitation (Inches.)		Wind. (Miles per hour.)			Sunshine.
	Maximum.	Minimum.	Mean.	Departure of Mean from Normal.	8 a.m.	Rain.	Snow.	Average Velocity.	Prevailing Direction.	Maximum Velocity and Direction.	Number of Hours.
T 1	45	30	38	+ 6	97	.02	0	21.6	NW	56 NW	5.4
F 2	30	13	22	— 9	42	0	0	25.8	NW	48 NW	7.6
S 3	20	9	14	—17	48	0	0	26.0	W	47 NW	7.4
S 4	22	8	15	—16	52	0	0	20.9	NW	32 NW	9.3
M 5	22	5	14	—17	57	0	0	24.2	NW	39 NW	9.4
T 6	35	16	26	— 4	49	0	0	11.8	W	32 NW	4.1
W 7	39	27	33	+ 3	42	T	0	13.0	SW	22 S	2.0
T 8	41	34	38	+ 8	76	.22	0	6.4	SW	18 W	0
F 9	41	33	37	+ 7	95	.67	0	15.2	NE	44 NW	0
S 10	34	22	28	— 2	59	0	0	22.1	NW	42 NW	9.4
S 11	33	25	29	— 1	74	.02	0.2	19.5	SW	39 NW	0
M 12	32	24	28	— 2	59	0	0	28.1	NW	64 NW	5.7
T 13	39	26	32	+ 2	65	T	T	26.1	S	57 NW	2.8
W 14	28	11	20	—10	34	T	T	44.6	NW	74 NW	4.6
T 15	24	10	17	—13	53	T	T	31.8	NW	44 NW	4.5
F 16	19	6	12	—18	57	.14	1.6	13.0	N	25 NW	0
S 17	32	13	22	— 8	73	.09	1.0	25.5	NW	49 NW	3.1
S 18	22	10	16	—14	42	T	T	33.2	W	51 NW	5.6
M 19	22	7	14	—16	63	.24	2.8	15.6	W	29 NW	0
T 20	34	12	23	— 7	78	.02	T	9.8	E	23 NE	2.3
W 21	34	22	28	— 2	86	.02	0	18.2	NW	34 NW	0
T 22	28	16	22	— 8	46	.17	1.9	14.1	NE	23 N	0
F 23	35	27	31	+ 1	73	.19	T	10.8	NE	19 NE	0
S 24	35	22	28	— 2	100	.26	0.2	13.4	NE	21 NE	0
S 25	22	8	15	—15	82	.01	0.1	20.5	N	31 NW	0.2
M 26	27	7	17	—13	55	0	0	9.3	NE	21 N	0
T 27	49	23	36	+ 6	95	.16	0	12.6	N	26 NW	7.1
W 28	41	17	29	— 1	85	T	T	21.2	NW	42 NW	4.7
T 29	28	12	20	—10	45	T	T	14.8	SW	28 NW	3.0
F 30	42	22	32	+ 2	75	0	0	26.3	SW	46 NW	8.0
S 31	27	—3	12	—18	59	0	0	26.5	N	40 NW	10.1
Month	Mean 31.7	Mean 16.6	Mean 24.1	Blank	Mean 65	Total 2.23	Total 7.8	Mean 20.1	Prev'l'g NW	Blank	Total 116.
Normal	37.6	24.1	30.2	Blank	76	3.79	8.7	13.2	NW	Blank	Possible 298.2

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MONTHLY BULLETIN
OF THE
DEPARTMENT of HEALTH
CITY OF NEW YORK

Public health is purchasable. Within natural limitations a community can determine its own death rate.

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ROYAL S. COPELAND, M. D., Commissioner of Health.

VOL. X. MARCH, 1920. No. 3

MEASLES, A STUMBLING BLOCK IN PREVENTIVE MEDICINE

By Louis I. Harris, Dr., P. H., M. D.,
Director, Bureau of Preventable Diseases.

The achievements of preventive medicine in controlling plague, cholera, yellow fever, malaria, smallpox and other diseases which formerly decimated the population of nations or of continents, have on many occasions been extolled and set forth in great detail, and while the span of life of individuals in civilized countries has been greatly lengthened as the result of such achievements, we are nevertheless still confronted with grave problems in the effort to still further reduce the ravages of certain infectious diseases.

The acute respiratory infections are year by year becoming more prominent in mortality statistics. Tuberculosis is fast yielding first place to pneumonia and the other acute respiratory infections as the Captain of Death. While considerable progress has been made by investigators in differentiating the various types of pneumococcus, and while a serum has been elaborated which is effective against type I pneumococcus, medical science has little to offer in the way of preventing the high and increasing mortality rate from pneumonia and the other acute respiratory infections. While as scientists, we may have reasonable assurance that ultimately medical research will discover more direct and potent methods of preventing acute respiratory infections and thus rob them of the terror which they inspire at the present time, we are nevertheless under moral obligation as public health officers to utilize other existing agencies and methods, however feeble and inadequate, to oppose the deadly sweep of the acute respiratory infections which occurs each fall and winter season.

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The deliberation and optimism of the scientist who waits for the ultimate evolution of medical discovery to yield more effective weapons with which to oppose disease, however admirable from an academic viewpoint, must, in the public health officer, give way to an impatience and eagerness to utilize every resource, however, inadequate, to give battle against diseases which claim so large a toll of victims annually, as do the acute respiratory diseases.

The prevention of the acute respiratory infections must at first sight appear little, if at all, related to the subject of the prevention and control of measles. It is the purpose of this communication to show in outline, subsequently, the close relation which exists between measles and acute respiratory infections, at least from the standpoint of preventive medicine.

With all our proud record of accomplishment in the prevention of disease during the past several decades, it is strange to note the fatalistic and hopeless attitude of public health officers with respect to measles. While public health officers preach with zeal and ardor that infectious diseases can be prevented, and that a community within certain reasonable limitations can determine its death rate, it is surprising to note how with unvarying uniformity health officers throw up their hands in helplessness and proclaim measles the exception to the rule. To deny that the prevention of measles presents a more difficult problem than perhaps any other infectious disease, would be foolhardy. But, if there be any merit in the strong claims everywhere made for the effectiveness of public health education and for the supervision of infectious diseases by public health visiting nurses, then measles need not necessarily continue to be the stumbling block which it has constituted to public health officers everywhere. Because its control is bound up with innumerable difficulties that are real and large, is no excuse for a policy of *laissez-faire*.

In a recent report from England, the vacillating attitude of public health officers toward measles received a very striking demonstration. It had been customary for a time to pay every practising physician who reported a case of measles a shilling for making such report. It is regrettable that such an expedient should ever have been employed or thought necessary to stimulate the performance of a public duty which is not only enjoined by statute, but which should receive the sympathetic support of every practitioner on the ground of moral obligation. But with the increased cost of living, the shilling apparently lost what alluring value it may have had, and coincident with its depreciation, a falling off in the reporting of measles was noted in various parts of England. Thereupon, those responsible for the administrative policy of the Health Ministry decided to take refuge behind the old and time-worn excuse that measles at best did not yield to measures for its control; therefore, efforts to secure the reporting of this disease could with impunity be abandoned, or at least relaxed. If time permitted, this event which has excited apparently little or no attention, might be made the text for trenchant criticism. It is cited here merely to indicate the state of mind which is almost universal with reference to efforts to control measles.

Quite properly, those who are opposed to administrative measures for the control of measles, point out that the period during which measles is most readily transmissable, is the pre-eruptive stage when the disease is frequently indistinguishable from simple acute catarrhal infections, and that therefore, by the time the symptoms characteristic of measles have become evident, there has been sufficient contact to permit of transmission of the disease. They point out, too, that susceptibility to this disease is so marked that if measles is not acquired very early in life, such susceptibility continues apparently to be quite marked and that if the disease is acquired in adult life it assumes a much more formidable aspect. Frequently, such experiences

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as that of our country during the recent war are cited in illustration of our helplessness to control measles. The advocates of this latter view point out that when relatively large numbers of young men from rural sections of the country were brought together and closely congregated in barracks, they suffered severely from measles, and the mortality from this disease, and especially from complicating pneumonia, was very great. This statement of facts in the main is correct.

For the nine year period from 1910 to 1918, inclusive, for which accredited mortality reports are available, the mortality rate for children under five years is as follows:

Deaths From Measles in New York City

Age.	1910-1918.	Per cent. of all deaths.
Under 1 year.....	1,498 deaths	25.9%
1-2 years.....	2,547 "	44.2%
2-3 years.....	839 "	14.5%
3-4 years.....	371 "	6.4%
4-5 years.....	177 "	3.1%

In other words, there was a total of 5,432 deaths from measles which occurred in children under five years and which represented 94% of the total number of deaths from this cause in all age groups. It will be seen further from this table that the mortality from this cause was very high among children under one year and was particularly high in children from one to two years of age. While the mortality continued to be high in children from two to three years of age, it was found to diminish rapidly and progressively after that age period. While the case fatality rate for measles was relatively small as compared with certain other infectious diseases, one cannot speak slightingly of a disease which in some years has claimed over a thousand victims, especially when we consider large number of cases in which measles is followed by a secondary and fatal pneumonia, or of other cases in which measles may have so undermined the powers of resistance as to make children the victims of diarrhoeal diseases or of tuberculosis.

Surely, public health officers cannot view with equanimity a disease of this character and fail to be moved to take some action which is reasonable, even though it be of small value. Surely, too, a disease which seems to be so dangerous in the first three years of life especially, constitutes a challenge to those who realize the value and sanctity of human life and who are pledged to do all that lies in their power to prevent even a single death. And surely, too, if we can in some measure succeed in postponing the occurrence of the disease until the danger period is past, namely, until after the fifth year, we should make every possible effort toward this end.

But, there are still other reasons why the control of measles must command the attention of everyone interested in preventive medicine and of every public health officer who is faithful to his trust.

The records of the Health Department show that there are more cases of measles reported annually than of any other acute infectious disease. The number of cases has shown marked fluctuations from year to year. For instance, there were 38,653 cases reported to the Health Department in 1908; in 1910, we had 35,374 cases; in 1912, 39,018; again in 1915, 38,186; in 1918, we had 28,675. It is therefore apparent that year after year an enormous number of cases of measles, relatively speaking,

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are reported to the Health Department. This presents an opportunity and a legitimate reason for the visit of a representative of the Health Department to a very large number of homes in the city, in addition to the visits made to the homes of other infectious disease cases.

It would be foolish to build great hopes on the ability of the nurse to check the spread of measles through home visits, when one considers that by the time the Health Department has received the report of a case through the mails, a sufficient period has elapsed to have permitted the exposure of all susceptible individuals in the family. We are fully cognizant that in a large number of cases, the nurse's visit is made too late to have any effect in checking the spread of measles. The chief argument in favor of the visit of the nurse to the homes of patients reported to be suffering from measles is that then, if ever, the parent or guardian of the patient is in a receptive mood, and likely to be impressed by counsel and instruction which has for its object to point out that many of the infectious diseases may be transmitted through discharges from the respiratory passages of persons who seem to have only very mild symptoms of a catarrhal character or who are suffering from a variety of diseases whose mode of transmission is by the respiratory discharges. The visit of the nurse is not so much for the purpose of controlling the spread of measles as to take occasion to deliver as emphatic and helpful a message as possible, at a psychological moment, with a view to opening the eyes of people to the great importance of the "common cold" and discharges from the respiratory passages of persons suffering from influenza and pneumonia and many other conditions in which the cause of fever or other signs of illness may be obscure. In other words, if we can create in people a profound respect and an attitude of caution which will lead them to avoid at least some of the numberless modes of contact which now prevail in the home, school, factory, restaurant, and social environment, we will have made considerable progress in educating such families in methods to prevent the occurrence of infectious diseases. To put the matter differently, the public health officer should be most solicitous to have the home visit made by the public health nurse for purposes of education, whether the disease be measles, pneumonia, acute anterior poliomyelitis, or any other disease in which the modes of transmission of infection are to a large degree similar, so that the lesson that is driven home is one which has value in helping educate such families to prevent all other infectious diseases with which they may come in contact directly or indirectly, and in which the mode of infection may be of the same general character.

Assuming that public health nurses are properly educated, and that they possess the personal qualifications requisite to deliver a message impressively and intelligently,—and if they are not, we must properly train them,—it must be apparent that if all cases of acute infectious disease which are transmitted through respiratory discharges are reported to the Health Department and are visited at once, we will in realty have adopted preventive measures which will have substantial value in educating the public as to the methods by which epidemics of one or another of these acute infectious diseases may to an appreciable degree be controlled. According to current practice, educational activities of a direct and personal character such as are here advocated, are brought into play only when one of the acute infectious diseases threatens to assume epidemic form. The plea for this type of intensive educational work does not overlook the fact that its effectiveness is necessarily limited in various ways, but taken together with other protective measures, it is bound in time to enhance the usefulness of our service to the community and to constitute an addition to our defensive measures which is clearly in line with the trend in the direction of more intensive education in public health matters.

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In this connection one should point out the ineffectiveness of the printed word when it is depended upon as the sole medium of public health education. Tons of printed matter are distributed annually by various public health agencies, and this fact is pointed to with great pride as demonstrating conclusively that the public has been won from bad habits and educated to act in accordance with the precepts and counsel given in circulars, pamphlets, leaflets, placards, etc. Too often, the wish is father to the thought, and the feeling of satisfaction of the writer of these circulars that he has turned a phrase neatly and emphatically, so that he has utterly convinced himself of the excellence and force of his instructions, blinds him to the fact that much of this literature fails to elicit the same warm and enthusiastic reaction in any appreciable number of readers.

In 1918, the Bureau of Preventable Diseases was inspired to drive home the value of typhoid immunization through a method of advertising which had apparently been held by mercantile establishments to be of superior value. One of the foremost experts in advertising in the country generously undertook to prepare a placard which would bring home to the public the exceptional merits of typhoid immunization. The placard was widely distributed in the cars of the elevated, subway, and surface lines, and on every station platform. There can be no question at all that the form of advertising and the method of its distribution had everything to commend it, and yet, at the end of the year, we recorded a smaller number of typhoid immunizations than in any of the preceding four years.

The above and other illustrations must bring home the fact that public health education unlike commercial advertising can best be brought home to the attention and understanding of people when supplemented by personal instruction of physicians and nurses whose word has authority and commands respect.

While the difficulty of preventing the spread of measles is acknowledged, it is too often overlooked by those who have opposed the activity of the Health Department in visiting cases of measles, that the home visit by the nurse serves in very many instances and more particularly in the congested sections of the city, to prevent the children from being permitted to wander about at will from room to room or even out of doors. Although one cannot with mathematical precision show in how many cases the visit of the nurse has been instrumental in keeping children who suffer from measles, confined to bed, and thus preventing pneumonia, there can be no doubt in the mind of any person familiar with conditions as they exist in certain sections of the city, that the nurse exercises a most beneficial influence in this way in reducing the incidence of secondary pneumonias.

While here and there, one encounters cases of measles in which no physician has been in attendance, by and large, the great majority of cases of measles are seen at least once by a family physician. Physicians generally resent any intimation or direct statement that they fail to exercise their influence to prevent the spread of infectious disease. Nevertheless, it is a fact which cannot be gainsaid that in the great majority of cases, the physician who sees patients suffering from acute infectious diseases quite early during the attack, is so hurried by the press of his manifold duties that he pays scant attention to the details of enforcing proper and thorough isolation of the sick and of preventing the transmission of infection. While it is of prime importance for him to give such relief as lies within his power to the patient who is suffering from a disease, he is at the same time under a moral obligation of paramount character to leave nothing undone that will protect the well, so far as possible, from acquiring the disease. The private physician is in a position, by virtue of his authority and influence, to render most effective service to the community in preventing the spread of disease, because in the great multitude of cases he is first on

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the scene. The function of the Health Department should be to second the efforts of the physician and when necessary to fortify and support his influence and efforts with the legal powers which it possesses. The time is not far distant when the occurrence of a secondary case of one of the acute infectious diseases will come to be regarded as a reflection of the guilt or carelessness of the parent, the physician, or the Department of Health, making due allowance for the fact that errors in diagnosis, even under the best conditions, are sometimes unavoidable, and that missed cases or the failure to recognize healthy carriers constitutes one of the difficulties in the control of infectious diseases.

The Bureau of Preventable Diseases has prepared a circular for distribution by the visiting nurses of the Bureau to as many tenants as possible in houses where cases of measles occur. This circular indicates the basic idea underlying the visits of nurses to cases of this character. It emphasizes the purpose to exercise so far as it may be possible an educational influence which will serve to put people on their guard to prevent the transmission not only of measles but of other acute infectious diseases, which, so far as their mode of transmission is concerned, have something in common with measles. By this mode of attack, it is hoped to contribute in some measure at least to the prevention of various acute infectious diseases, especially pneumonia.

The following is a copy of the circular which has been prepared for the above purpose:

Measles Is a Serious Disease
Fortunately the Majority of Cases Get Well
But

Do You Know that there were seven hundred and ninety (790) deaths from measles in the City of New York during 1918?

Do You Know that frequently the number of deaths per year has been approximately one thousand (1,000)?

Do You Know that measles frequently causes pneumonia which kills several hundred children each year?

Do You Know that we have had an average of thirty-one thousand and two hundred (31,200) cases of measles per year reported to us during the last ten years? (Unfortunately, a large number of cases are not reported to us.)

Do You Know that only about one-half of the cases of measles occur in children under five years, but that 95% of all the deaths from this disease occur in children of this age group? Therefore, Protect Your Child Most Carefully Against This Disease, So That if it Catches it, it Will Be After the Dangerous Age Has Been Passed.

Do You Know that measles may be the cause of tuberculosis in children, and that frequently, it is responsible for chronic bronchitis, for heart or kindey disease, or for prolonged general weakness?

Do You Know That If You Follow the Advice Which We Give for Protecting Your Child Against Measles, That You Will Also Be Protecting It from Infantile Paralysis, Pneumonia, Influenza, Whooping Cough, Cerebro Spinal Meningitis, Scarlet Fever and Diptheria?

Advice as to How to Prevent Measles and Other Diseases, and the Care of the Patient.

Under no circumstances allow your children to come in contact with any person, whether a grown-up or child, who may be suffering from what you think is just "an ordinary cold."

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So far as possible, keep your child away from everyone who coughs, sneezes, has a running nose or fever. This rule should apply to those in your own family, as well as to strangers.

Never allow your child to be kissed near the mouth by anyone, no matter how closely related.

If a child seems to have fever and is coughing or sneezing, or has a running nose, it should at once be kept separated from other children in the family, and in a room by itself, if possible. No child having such symptoms should under any circumstances, be sent to a public school, or a religious school, or allowed to attend a children's party or play with other children. These symptoms appear before the rash, if the disease is measles, and it is during this period that the contagion is most rapidly spread.

A number of the diseases which have already been mentioned in this circular, begin frequently with symptoms which make the case look like one of an ordinary cold, and yet these symptoms may be the beginning of one of a number of very serious diseases. In some cases, a child with very mild symptoms may transmit measles, whooping cough, influenza, pneumonia, or other disease in a most severe form to others.

If parents could only be made to realize that a case with a mild cough, or running nose, or sneezing, may cause others to become severely ill, or be responsible for their death, they would never send a child to school when it has such symptoms.

So far as possible, train your child to avoid putting its fingers into the mouth or nose.

Hand-shaking should be prevented so far as possible; many people who are suffering from what they think is a mild cold, have soiled their fingers or hands with sputum or nasal discharge.

Never allow a child to take into its mouth, pencils, whistles, or toys which have been handled by others.

The face and hands of every child should be washed before eating.

No handkerchiefs, napkins, bed sheets, pillow cases, blankets, or other material which may contain discharges from the mouth, nose or throat of sick persons, should ever be brought in contact with any well persons. Handkerchiefs and cloths should be destroyed and other material disinfected by boiling, so far as possible.

The mother or other person who nurses a sick child should avoid coming in contact with other children.

Every sick person should have separate dishes and these should be carefully washed in boiling water before they are employed by any other person.

Dusting with dry rags or dry sweeping is dangerous under all conditions, but it is particularly dangerous when it is done in a sick room.

While flies are always a source of danger, and frequently carry various diseases from one person to another, they should be kept out of sickrooms and kitchens, in particular, and they should not be allowed to come in contact in any way with food.

Visits to the homes of sick persons should be strictly avoided.

Dogs, cats, and other pets should be excluded from the sick room; they carry the germs of disease.

Above all things, no person suffering from measles should be permitted to get up from bed until free from fever, and allowed to do so by a physician. This is most important to prevent pneumonia.

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When the patient recovers, the clothing worn by such person, and the bedding, should be sterilized by boiling, and, so far as possible, the floor and the woodwork should be cleaned with a solution prepared by using one pound of soda (sal-soda) to three gallons of hot water. The room occupied by the patient should be thoroughly aired and exposed to sunlight.

Books and toys used by the patient should so far as possible be destroyed.

Rules of the Health Department That Must Be Observed.

The rules of the Health Department forbid any person in the home in which a case of measles occurs, from working in any establishment where food is prepared, served or sold.

Children who have had measles can return to school only if they have a certificate from their private physician or from a representative of the Health Department, showing that they have fully recovered from the disease. Such children must be free from redness of the eyes, discharge from the nose or throat, and the cough and rash must have disappeared before they can be allowed to return.

A child who has recovered from measles or who has been excluded because of exposure to this disease, and who desires to return to school, must first be seen by the school nurse and present a proper certificate from the Health Department or the private physician, in accordance with the regulations of the Health Department.

Others in the family where a case of measles occurs, must be excluded from school unless they have a certificate from the Health Department, which shows that they have previously had the disease.

Those children in the family who have not previously had measles, must be excluded from school until fourteen days after the date when they were exposed to the last case of measles, or until fourteen days after they have removed to another address.

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KOPLIK'S PRE-ERUPTIVE DIAGNOSTIC SIGN OF MEASLES

By Jacob Sobel, M. D.,

Assistant Director, Bureau of Child Hygiene.

According to the records of the Bureau of Preventable Diseases, fewer cases of measles were reported during 1919 than in any single year during the past two decades. All in all, some 8,194 cases were recorded during that year, of which 4,750 were reported from January to November, inclusive, and 3,444 during the month of December. The nearest approach to this low figure, in another year, is to be found in 1901, when a total of 11,900 cases were reported. Considering that, in 1901, the population of the Greater City was 3,554,000, and, in 1910, about 6,000,000, the low measles incidence, in 1919, is all the more remarkable. Usually, when measles is unduly prevalent, the peak occurs in the interval from May to June, with a beginning and marked increase in March and a decline in July.

It appears from recent events that the present increased prevalence of measles, which began in November and December of 1919, as stated by the Director of the Bureau of Preventable Diseases, "anticipates the conditions which are found in the late winter, spring and early summer months, up to the time when school closes."

Reported Cases of Measles—City of New York.

Year.	March.	April.	May.	June.	Total Number of Cases.
1913	4,369	5,241	6,231	4,471	29,163
1914	3,483	4,485	5,483	4,094	26,793
1915	5,053	7,849	9,088	7,602	38,186
1916	3,281	4,208	4,579	3,393	21,603
1917	3,941	4,634	5,736	4,355	27,419
1918	6,345	6,003	4,538	1,812	28,675
1919		Uncorrected total			8,194

Just now measles is unusually prevalent in New York City, more prevalent than the records of the Department show, since undoubtedly a large number of cases are not being reported, and furthermore, since many are being cared for at home without medical attention, especially the secondary cases.

It is well known that infection with measles takes place in the majority of cases from another case in the pre-eruptive stage. Necessarily, all measures which make for prompt diagnosis and early isolation should be inaugurated at the earliest possible moment. It may, therefore, be timely to call attention once more to a sign which is absolutely pathognomonic of beginning measles, which appears in no other disease or in health, which is observed in the vast majority, if not in all of the cases in children, as well as adults, and which, if diagnosed, stamps the disease or condition as measles and demands isolation.

In December, 1896, Dr. Henry Koplik, of New York City, described, in the "Archives of Pediatrics," an eruption limited to the mucous membrane of the cheek and lips—the buccal mucous membrane—which he considered as a pathognomonic pre-eruptive sign of measles. He stated that this sign appeared in this disease and in this disease only. Since that time numerous investigators and clinicians have corroborated his statement and have applied this valuable sign as an aid in diagnosticating measles, *before the appearance of the rash.*

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It is strange, however, that, despite its pathognomonic character, despite its ease of diagnosis, when once seen and understood, despite its accessibility, despite the fact that it appears in from one to four days or more before the appearance of the rash, it is strange that there still remain many physicians who are unfamiliar with this sign, or who fail to look for and recognize it when present.

I may say at the outset that, while some investigators have contended that this sign is not present in every case of measles, it is my opinion that it occurs in every case at some time before the rash appears and that the fact that it is not recorded as present by the physician is due either to his failure to recognize it, to an error in diagnosis—in the main consisting of diagnosticating aggravated cases of Liberty measles as measles—or to the fact that, at the physician's visit and examination, the time for the appearance of this sign has not been reached or has passed, as will hereafter be noted.

Just now, when measles is so rampant in New York City, and when it is likely to increase, a discussion of this valuable sign may not be amiss. The diagnosis of measles, when the rash appears and is spreading, usually presents little difficulty. There are many diseases, it is true, which resemble it, but on the whole the diagnosis is comparatively easy. It is in the pre-eruptive stage, however, that the premonitory signs of coughing, fever, coryza, conjunctivitis, photophobia, sneezing, indisposition, etc., may make one think of influenza, bronchitis, tonsilitis or common colds. At this stage, too, one may find in measles a few scattered papules on the hard or soft palate or uvula, or upon the fauces, or there may be a redness of the throat. These signs, however, are not especially characteristic of measles, since similar conditions, particularly a general redness of the throat, may be found in grip, scarlet fever, Liberty measles or simple angina.

In discussing this subject, let us ask ourselves the following questions: (1) What is this sign? (2) When and where does it appear? (3) With what may it be confused? (4) What is its significance and importance?

The Sign:

Before describing the sign—Koplik's spots—attention must be called to the fact that, in order to detect it, strong daylight is absolutely necessary. Ordinarily gaslight is entirely unsatisfactory and the sign is frequently overlooked when it is used. A white Welsbach or electric light sometimes answers, but strong daylight is always preferable. This sign, or Koplik's phenomenon, consists, to quote the author, "of small, irregular spots of a bright red color; in the center of each red spot is seen a minute bluish-white speck. There may at first be only two or three or six such rose-red spots, with a bluish-white speck in the center. The combination of a bluish-white speck with a rose-red background on the buccal and labial mucous membrane is absolutely pathognomonic of the invasion of measles. Sometimes the bluish-white speck is so small and delicately colored that only in a very direct and strong daylight is it possible to bring out the above effect, but the combination is always present." These rose-red spots, with a minute bluish-white speck in the center, may be few in number, or so numerous as to cover the whole inner surface of the cheek. They frequently appear first on the buccal mucous membrane, opposite the location of the last molar teeth. When once seen and thoroughly understood they will always be remembered and never confused with anything else. These spots are not removed by ordinary manipulation, such as eversion of the mucous membrane of the lips and cheeks by means of the fingers or tongue depressors. Forcible swabbing of the mouth, however, sometimes removes them, and this, too, may account for their absence in

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some cases. They may be removed by the use of thumb forceps. Microscopically, they are said to consist of bacteria, mostly diplococci, sometimes streptococci and epithelial scales.

This sign appears on the buccal and labial mucous membrane only and not on the hard or soft palate, tonsils, fauces, pharynx or tongue. The eruption or sign passes through a sort of cycle and appears from one to five days before the appearance of the rash, usually two days before the appearance of the rash. These Koplik spots—rose-red spots with an infinitesimally minute bluish-white speck in the center—are at first discrete, but later the rose-red spots coalesce and there appear large areas of rose-red studded with bluish-white specks, with intervening normal areas of pale pink buccal mucous membrane. Finally, the whole buccal and labial mucous membrane become of a uniform rose-red color studded with numerous bluish-white specks. At the latter stage the skin eruption has appeared and is spreading, and when this is at its height the buccal eruption begins to fade and pass away. It must be emphasized that when the skin eruption is at its effloresence, the buccal eruption has begun to fade and lose its characteristics.

As previously stated, when once seen and studied, Koplik's spots will not be mistaken for anything else. It is advisable to have them pointed out by one who is familiar with them or, this wanting, to see the plates accompanying Koplik's articles. The uninitiated may confuse these spots with the following: (a) simple aphthous stomatitis: This condition, however, consists of red spots surmounted with a yellowish or pale yellow vesicle, either intact or ruptured. The intervening mucous membrane of the cheek and lips is normal, the eruption is discrete, never confluent. (b) Normal epithelial pearls: These are small, elevated, minute, yellowish-white specks, situated below the mucous membrane of the cheeks and shining through them. They are not surrounded by a red halo; they are of large size, of more irregular form, brownish or yellowish-white in appearance, of greater elevation than the Koplik spots and are situated upon normal pale pink mucous membrane. (c) Sprue: This consists of whitish plaques and is usually situated on the tongue and hard and soft palates, as well as on the buccal mucous membrane. This condition consists of irregular sized patches considerably larger than Koplik spots. (d) Food particles: Particles of milk, bread, etc., are easily detected and readily removed. (e) Saliva particles: This consists of small bubbles, easily ruptured and removed.

The great significance of this sign is that it is a pre-eruptive, pathognomonic sign of measles, appearing in practically every case of the disease in from one to five days before the appearance of the rash. It occurs in no other disease and never in heatlh. It is of value in differentiating beginning measles from grip, bronchitis, colds, scarlet fever and other conditions with prodromata or signs similar to measles. It serves to differentiate the beginning of measles rash from other rubeoliform eruptions—Liberty measles, variola, antitoxin rashes, vaccination rashes, drug eruptions, multiform erythema and similar eruptions. This sign is of great value in diagnosticating measles and similar rashes in the colored race, in which skin lesions are often difficult of proper interpretation. In my work and in reports of other investigators, the value of Koplik's spots in diagnosticating measles in the colored race has been very decided.

This sign, by establishing an early diagnosis, enables prompt isolation in hospitals, institutions, asylums, dispensaries, schools, clinics and other child-caring centers. Its detection in school children demands a prompt exclusion at the very time when the disease is most communicable.

In schools, given one or more cases of measles in a classroom, it is incumbent upon the medical inspector or nurse, beginning nine to ten days after the exclusion

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of each particular case, to conduct daily and systematic examination of the buccal membrane of all children in that classroom, particularly those who have not had the disease before, for the purpose of detecting Koplik's spots. Once these spots are detected, the diagnosis of measles is absolutely established and exclusion is not only justified but warranted and demanded.

I am furthermore of the opinion that in the periodic school classroom routine examination and in the morning inspection of children, the examination of the buccal mucous membrane for the detection of Koplik's spots should be a matter of regular routine. The great reason why this sign is not more regularly detected, is due to the failure of most physicians in examining the mouths of infants and children to evert the mucous membrane of the lips and cheeks and thoroughly inspect them.

To many physicians, examination of the mouth means the throat, tonsils and pharynx, and herein lies the cause for overlooking this valuable diagnostic sign. I am convinced from an experience with this sign, since 1898, that a systematic search for it in all infants and children, particularly at a time when measles is prevalent, will result in an easier detection and diagnosis of measles than is usually the case, as well as in its more effectual isolation and control. I have absolute confidence in the pathogomonic character of this sign. I stand by what I said of it in October, 1898. "Just as malaria can be diagnosticated upon finding the plasmodium in the blood—let the history and symptoms be what they may—so can we disagnosticate measles by the presence of Koplik spots." The spots are often present before the symptoms of fever or conjunctivitis. The number of spots bears no relation to the severity of the disease or to the prognosis. If one will bear in mind that the spots pathognomonic of measles are very small, round, bluish-white specks of more or less uniform size and shape, with either a definite area of congestion or situated upon a diffuse red background; if he will remember that they never ulcerate, that they occur on the mucous membrane of the cheeks and lips and not upon the tongue, gums, pharynx, hard or soft palates, he will seldom, if ever, experience any difficulty in recognizing them or in confusing them with sprue, aphthous stomatitis and other conditions.

The control of measles affords a fertile field for investigation and study by public health officials. Because it is difficult, or as considered by some, well-nigh impossible to control, is no justification for "standing pat." With the definite knowledge that the disease is highly contagious, the virus exceedingly volatile and the communicability greatest in the pre-eruptive stage before the disease is suspected or recognized; with the admission by all sanitarians that isolation and quarantine, after the appearance of the rash, are of little value in preventing the spread, the hope of successful control at present rests largely in the direction of diagnosis in the pre-eruptive stage and prompt isolation.

In Koplik's spots we have the only known pathognomonic sign of beginning measles. It therefore behooves all physicians and public health officials who are responsible for the care and well-being of infants and children, to thoroughly acquaint themselves with the details of this phenomenon—its characteristics, location, differential diagnosis, significance and application. Measles in itself is not a very fatal disease. The greatest mortality—some 90 per cent.—occurs in children under five years of age, usually by reason of complications and sequelae—pneumonia, empyema, tuberculosis, etc.

Acting under orders from the Commissioner, the Bureau of Laboratories is now conducting a series of investigations and experiments, to discover if possible, effective scientific measures, for the control of measles. The ultimate control of the disease lies, of course, in the application of specific prophylactic, passive or active immunization either through the discovery of the causative agent of the disease, which at present is unknown, or through other means.

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THE DISPENSARY AS AN ELEMENT IN THE SOCIAL FABRIC.

By E. H. LEWINSKI-CORWIN

Executive Secretary of the Associated Out-Patient Clinics of the City of New York.

The problems of health and sickness are among the most important concerns in community life. While from time immemorial the sick were receiving attention on the part of society, public efforts for the prevention of disease and the conservation of health are products of recent evolution. Because of its ancient origin, the communal care of the sick has had an aspect of charity, while the modern movement for health conservation is fortunately entirely free from it.

As the care of the sick cannot be altogether separated from the preventive side of medicine, the traditions pertaining to the former are being frequently offended by the impetuosity of the younger associate. Many changes have taken place in the care and treatment of disease since the public health movement has acquired its momentum. It would, however, be utterly incorrect to say that the improvement that has come in the care of the sick has been the result of the impetus that the public health movement has given to it. As a matter of fact both, the modern treatment of disease and the modern sanitary progress, are the results of the great advances made by medical and cognate sciences.

The epoch-making discoveries of the last generation have stimulated further research and investigation and have led to the demand for the improvement in the housing, treating and nursing of patients. Accordingly, the hospital has undergone an evolution, not only from the point of view of organization, medical and nursing care, laboratory, X-Ray and other diagnostic and therapeutic aids, as to ventilation, diet and similar physical facilities, but also in the attitude of the community toward the hospital. The hospitals are not for the poor only, as they used to be; they are designed for the care and treatment of the sick irrespective of whether they are rich or poor.

We have come to realize that in many instances the hospital is a better place to be taken care of when ill than the home, even if it be a home of the wealthy. This is particularly true of certain types of surgical work and it is also true of a large number of other conditions.

From the public health movement the hospitals have received a stimulus to consider the environment of the patients in connection with the understanding and treatment of disease, and social service work has been taken up in the hospital with a view of ascertaining and changing, if need be, the environment of the patient, so that the results of the hospital work may be more enduring. We are rapidly approaching the time when the hospital will be among the most efficient and helpful social agencies in community life. The hospitals are awakening toward the realization of their responsibilities and opportunities.

But the problem of disease is only in a small measure met by the hospital. The hospital serves chiefly those who are acutely ill. In a study made by the Board of Estimate and Apportionment of the City of New York, it was found that of the 145,236 cases of sickness discovered in the lower East Side district, 10.6% were treated in institutions. Only 35% of the typhoid cases were treated in hospitals. (See reference at foot of page.*) In a recent study conducted by the Public Health Committee of the New York Academy of Medicine it was found that 8.1% of the cases of illness were treated in hospitals. In other words, the hospital occupying, as it does,

* Report of the Committee on Inquiry of the Board of Estimate and Apportionment of New York, 1913, pages 522 and 523.

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an important position deals with about 10% of the problem of disease. A larger share of it is being taken care of by the dispensary.

The figures for the number of persons treated in dispensaries in New York State are stupendous. According to the last report of the State Board of Charities, 1,324,728 different persons were treated in dispensaries in 1918, of which 1,244,352 were treated in New York City. It is inconceivable that over a million people in New York City be indigent and therefore applying for the practically free services of the dispensary. We must, therefore, conclude that the dispensary has ceased to be a place to which only the very poorest in our midst come for relief and that it has become an important social agency in the community. If nothing else, the very size of the dispensary problem, in terms of figures, entitles it to serious consideration which it has not had heretofore.

The problems of dispensary organization and administration are probably more involved and more numerous than the problems of hospital management, yet in very few out-patient departments have sufficient time and thought been given to the solution of the pressing questions. How should a dispensary be organized to meet best the demands of the people who come for advice and treatment, how to stimulate the interest of physicians in their clinic work, what should be the dispensary admission fees and other charges, how to reduce the waiting time of patients and how to put the dispensary on as high a level of efficiency as it deserves, are only a few of the problems that demand immediate attention.

The question of pay clinics is another problem that has to be faced and solved in some satisfactory manner to everyone concerned. A study of statistics of attendance at various departments of dispensaries indicates that about 20% of the patients come to the departments of internal medicine and the remainder is divided among pediatrics, surgery and the several specialties. In other words, it seems that the majority of patients applying at the dispensary come to consult a specialist whose ordinary fees they cannot meet, particularly if the disease is of a chronic nature and calls for repeated visits and expensive laboratory and other tests.

In the light of the fact that 80% of the patients come to consult specialists or are in need of special treatment requiring the employment of certain apparatus, the "abuse of dispensaries" becomes less flagrant than would seem from a casual study of the number of people making use of the dispensary. Painstaking economic studies made in various cities, such as Philadelphia, St. Louis, Chicago, Boston and New York, indicate that undue advantage is taken of the dispensaries by from 2 to 5% of the applicants.

In studying the attendance at dispensaries by racial groups, we find that certain of our foreign elements, like the Italians and the Slavs in particular, made very little use of the dispensary as well as of the hospital. This indicates that they are yet ill adapted to their new environment and that they do not appreciate the value of the treatment and care which they can receive from medical institutions. A study of how the immigrants adapt themselves to conditions in this country brings out interesting facts, as the following summary of information obtained for a group of 459 Italian families in New York indicates. Among those of the families who lived in the United States for less than five years only 3½% used the hospital when sick. Among those who lived in this country from 6 to 10 years the proportion of those using hospitals remains about the same as in the other group, while there is a decided increase in the percentage of families using medical institutions after they had been in this country for over ten years. With regard to the use of the dispensary there is an observable gradual increase in proportion to the length of stay in this country. Curiously enough, self-medication seems also to increase in proportion to the length of residence in the United States. While it was indulged in by 5.3% of families who had

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been in this country for less than five years, it increased to 13.6% among families whose length of residence in the United States was from 11 to 15 years.

The dispensary has been regarded by the public as a "medical soup kitchen." This attitude is gradually changing as the methods and practices attain a higher order and as the dispensaries, like the hospitals, begin to realize their great responsibilities and opportunities, not only in curative medicine, but also in the field of prevention of disease and the promotion of public health.

The dispensary appreciates, or should do so, that by an early detection and proper treatment of incipient disease, the patient often can be saved a chronic disability, that his family can escape a harassing economic decline, that the hospital can lessen its burden and that the productive energies of the community need not suffer from the health neglect of the citizenry. The foundation stone of the anti-tuberculosis movement rests on the recognition of this circle of causation. It applies equally to venereal diseases and other conditions.

Treatment is becoming a matter of education rather than of drug administration exclusively or of didactic command. From pedagogues we know that interest and desire to learn are the greatest assets in educability. The fact that patients come to the dispensary of their own volition, eager to learn of their ailments is an element which could be rendered to great advantage in instructing them how to live properly. The patients are more in a mood to profit by instruction than when they are feeling well. Information imparted under such circumstances is likely not to be disregarded and the opportunity to teach must not be overlooked by the institutions. The waiting time in dispensaries, sometimes of several hours duration, can be utilized in an educational way through moving pictures, large posters and dietetic demonstrations. The problem of nutrition is one of prime importance, particularly in this era of unheard-of high cost of living expenses.

We are spending twelve billion dollars annually, or one-quarter of the income of the working population, for food and practically nothing on dietetic education. The dispensaries can do a great deal to disseminate sound information about food and nutrition. They can become neighborhood centres for health education in very many other directions. Corrective gymnastics might be taught and a great deal done particularly with children, about proper posture and the inculcation of health habits. In other words, the dispensary can become, because of its enormous reach, one of the most important social and public health agencies in the community if it should will to do so.

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SUMMARY OF VITAL STATISTICS FOR THE MONTH OF FEBRUARY, 1920.

The most noteworthy feature of the mortality for the month of February, 1920, was the culmination of the epidemic of influenza, which appeared in the latter end of the previous month, and which continued through the month of February, with a very marked increase in the number of deaths reported from influenza and its accompanying acute respiratory diseases. There were 2,219 deaths reported from influenza; 1,581 from lobar-pneumonia; and, 1,527 from broncho-pneumonia, making a total of 5,327 deaths from these causes, as compared with 1,311 deaths from influenza, 1,207 from lobar-pneumonia and 848 from broncho-pneumonia, making a total of 3,366 deaths from these three causes in the same period of 1918. Thus these causes were responsible, during the past month, for an increase of 1,961 deaths over the experience of February, 1919. It is evident that the return visitation of the pandemic of the fall of 1918, while very pronounced in its effect on the mortality lists, did not at all approach that of the great epidemic, during which 33,373 deaths were reported from these causes, from September 25, 1918, to March 14, 1919. It will be remembered that the pandemic died down for a short period in December, 1918, and then burst forth with considerable intensity in January, February, and March of 1919, so that in order to make a fair comparison it would be more advisable to compare the results of a normal February, such as in the year 1917, with that of February, 1920. In February, 1917, there were 123 deaths reported from influenza; 876 from lobar-pneumonia; and, 480 from broncho-pneumonia, making a total of 1,479 deaths from these causes, as compared with 5,327 deaths in the month just closed—an increase of 3,830 deaths. The epidemic, in February, 1920, had several exceptional features which were not evident in the pandemic of the fall of 1918 and its recrudescence in the winter months of 1919, one of which was a considerable increase, measured by 275 deaths, in the mortality from organic diseases of the heart, and of 71 deaths from organic diseases of the kidneys, as compared with the figures for February, 1919. Another feature was a considerably increased mortality during the early years of life, especially under 5 years of age, as there were 1,098 more deaths reported at this age group than in February, 1919. A third feature was an increase of 641 deaths among persons aged 65 years and over. The one age group that did not register an increased mortality was that between 5 and 15 years of age. On the other hand, the epidemic was very much like that of 1918 and 1919 by its destruction of life at ages 15 to 65, especially in the age group 25 to 45. The increased mortality in the early ages, especially under 5 years was, in great measure, due to the prevalence of severe epidemics of measles and whooping cough, there having been 185 deaths reported from the first cause, as compared with 7 deaths in February, 1919, and 98 deaths from the second cause, as compared with 9 in February, 1919. These two causes materially affected the mortality from broncho-pneumonia among children at this age group.

The number of deaths reported from typhoid fever, during the month, was 4, as compared with 5 in February, 1919. Pulmonary tuberculosis was given as the cause of death in 693 cases, as compared with 754—a decrease of 62 deaths. This decrease in the mortality from tuberculosis is in accord with the experience which we have had during the past two years in regard to the mortality from this important cause of death, the decrease being undoubtedly due to economic causes, such as increase in wages and more abundant supply of proper food.

The total number of deaths reported from all causes during the month was 11,523, with a rate of 23.64 per 1,000 of the population, as compared with 8,622 deaths,

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and a rate of 18.73 in the corresponding month of 1919. As there were only 11,255 births reported during the month, it would seem that the number of deaths outnumbered that of births by 268, a very rare occurrence in our records.

The number of marriages reported during the month was 4,224, as compared with 3,931—an increase of 292.

The increase in the number of births in February, 1920, over the corresponding month of 1919 was 832.

POPULATION, MARRIAGES, BIRTHS AND DEATHS, FEBRUARY, 1920.

Boroughs.	Population U. S. Census April 15, 1910.	Estimated Population July 1, 1920.	Certificates Received and Tabulated.			Rate per 1,000 Based on Department Estimate.			Corrected Death Rate. **	Corr'td Death Rate Correspon'g Month 1919.
			Marriages	B'ths	* D'ths	Marriages.	B'ths.	D'ths.		
Manhattan	2,331,542	2,829,239	2534	4,809	5,134	11.28	21.40	22.85	22.40	17.90
The Bronx.	430,980	669,233	421	1,317	1,314	7.92	24.78	24.72	24.55	21.17
Brooklyn..	1,634,351	2,117,908	1,043	4,151	4,024	6.20	24.68	23.93	24.50	18 49
Queens....	284,041	419,506	170	762	766	5.10	22.87	22.99	24.73	20 59
Richmond.	85,969	105,559	55	216	285	6.56	25.77	34.01	28.64	23.41
N. Y. City.	4,766,883	6,141,445	4,223	11,255	11,523	8.66	23.08	23.64	.....	18.73

*Includes 341 deaths of non-residents of the city, which, if deducted, would give a death rate for the city of 22.93 per 1,000.

**Corrected by redistributing deaths according to borough of residence.

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REGISTERED MORTALITY FROM PRINCIPAL CAUSES.

FEBRUARY, 1920.

	Manhattan.		The Bronx.		Brooklyn.		Queens.		Richmond.		City of New York.	
	Feb.		Feb.		Feb.		Feb.		Feb.		Feb.	
	1920	1919	1920	1919	1920	1919	1920	1919	1920	1919	1920	1919
Total, all causes	5033	3812	1305	1048	4121	2935	824	641	240	186	11523	8622
1. Typhoid Fever	1	3	1	...	....	2	1	...	1	...	4	5
3. Malarial Fever	....	....	...	...	....	....	...	...	...	...	....	....
4. Typhus Fever	....	....	...	...	....	....	...	...	...	...	....	....
5. Measles	113	3	15	...	45	4	7	...	5	...	185	7
6. Scarlet Fever	10	4	2	6	6	1	3	3	...	...	21	14
7. Whooping Cough	37	5	17	...	27	3	14	1	3	...	98	9
8. Diphtheria and Croup	68	58	15	37	56	56	9	3	1	7	149	161
9. Influenza	937	537	289	174	803	447	136	121	54	32	2219	1311
10. Cholera Nostras	....	....	...	...	....	....	...	...	...	...	....	...
11. Poliomyelitis	....	....	...	...	1	....	..	...	...	...	1	...
12. Other Epidemic Diseases	12	11	3	3	9	10	2	3	...	1	26	28
13. Tuberculosis Pulmonalis	305	369	91	83	223	241	59	45	14	16	692	754
14. Tuberculous Meningitis	28	33	8	4	11	11	1	1	1	1	49	50
15. Other forms of Tuberculosis	15	13	4	3	11	3	7	4	..	..	37	23
16. Cancer, Malignant Tumor	201	169	62	45	132	117	37	28	7	7	439	366
17. Simple Meningitis	22	13	2	10	11	6	1	4	1	1	37	34
Of which												
17a. Cerebro Spinal Meningitis	6	5	1	2	6	2	...	4	...	...	13	13
18. Apoplexy and Softening of the Brain	34	36	8	13	36	32	5	10	5	5	88	96
19. Organic Heart Diseases	508	438	146	106	513	351	83	70	19	29	1269	994
20. Acute Bronchitis	60	36	5	4	91	32	7	3	3	1	166	76
21. Chronic Bronchitis	12	7	5	5	10	5	3	1	1	..	31	18
22. Pneumonia (exc. Broncho Pneumonia)	719	531	202	159	531	398	101	93	28	26	1581	1207
22a. Broncho Pneumonia	760	387	138	110	493	282	113	60	23	9	1527	848
23. Other Respiratory Diseases	31	25	7	4	28	24	8	2	1	1	75	56
24. Diseases of the Stomach (Cancer excepted)	16	9	4	2	4	16	1	2	...	..	25	29
25. Diarrhoeal Diseases (under 5 years)	78	53	12	14	59	57	7	7	3	3	159	134
26. Appendicitis Typhlitis	16	21	4	13	24	13	3	1	4	...	51	48
27. Hernia, Intestinal Obstruct	24	28	10	6	20	18	5	6	2	...	61	58
28. Cirrhosis of Liver	16	15	5		17	7	3	1	...	...	41	27
29. Bright's Disease and Nephritis	172	153	38	45	276	233	55	46	14	7	555	484
30. Diseases of Women (not Cancer)	4	8	4	2	8	9	1	1	...	...	17	20
31. Puerperal Septicaemia	8	4	4	1	4	3	1	2	...	1	17	11
32. Other Puerperal Diseases	16	11	5	6	17	19	3	3	1	2	42	41
33. Congenital Debility and Malformations	169	168	46	42	145	117	31	28	4	6	395	361
34. Old Age	8	16	6	6	23	12	5	3	1	...	43	37
35. Violent Deaths	117	132	25	33	81	106	21	13	5	13	249	297
a. Sunstroke	...	....	...	...	....	....	...	...	...	...	....	....
b. Other Accidents	105	121	22	31	79	95	21	13	5	13	232	273
c. Homicide	12	11	3	2	2	11	...	...	...	...	17	24
36. Suicide	24	34	2	3	13	14	5	6	2	..	46	57
37. All other causes	478	479	118	105	391	284	85	70	37	17	1118	955
38. Ill-defined causes	5	3	2	...	2	2	1	...	...	1	10	6

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REGISTERED MORTALITY FROM ALL CAUSES AND CERTAIN INFECTIOUS DISEASES, BY WARDS, FEBRUARY, 1920.

BOROUGH OF MANHATTAN.

Wards.	Area in Acres.	Population U. S. Census 1910.	Number of Persons to the Acre.	Typhoid Fever.	Smallpox.	Measles.	Scarlet Fever.	Diphtheria and Croup.	Pulmonary Tuberculosis.	Lobar Pneumonia.	Broncho-Pneumonia.	Diarrhoeal Diseases.	All Causes.	Deaths of Children Under 5 Years.
1	154.0	9,750	63.0	..	..	..	..	..	4	15	9	1	41	7
2	81.0	933	11.5	..	..	..	..	..	1	3	..	..	8	1
3	95.0	1,915	20.2	..	..	..	..	..	1	1	2	..	8	2
4	83.0	21,336	257.1	..	..	1	..	1	5	7	9	5	66	28
5	168.0	5,666	33.7	..	..	..	..	..	2	3	2	1	13	1
6	86.0	19,670	228.7	..	..	1	..	..	3	12	8	1	55	11
7	198.0	102,101	515.6	..	..	2	1	1	6	26	34	2	152	58
8	183.0	33,182	181.4	..	..	..	..	2	5	11	7	2	65	21
9	322.0	64,909	201.6	..	..	4	..	..	6	17	22	1	154	30
10	110.0	66,439	604.0	..	..	6	..	1	4	17	20	1	90	33
11	196.0	136,548	696.7	..	..	2	..	2	9	13	28	3	136	43
12	6,154.0	806,648	131.1	1	..	34	3	25	123	315	242	32	1928	460
13	107.0	64,651	604.3	..	..	1	1	..	1	11	11	1	69	12
14	96.0	38,321	399.3	..	..	5	..	3	6	13	20	4	98	51
15	198.0	30,584	154.5	..	..	2	..	1	7	7	9	1	71	17
16	349.0	55,926	160.2	..	..	3	..	..	10	15	22	2	141	28
17	331.0	172,334	520.6	..	..	10	1	6	19	40	56	6	299	112
18	450.0	62,821	139.6	..	..	6	1	4	8	12	33	6	166	50
19	1,481.0	292,950	197.7	..	..	27	1	9	36	71	101	6	635	168
20	444.0	73,308	165.1	..	..	2	1	2	10	18	16	..	152	25
21	411.0	62,345	151.7	..	..	5	..	5	13	15	30	2	174	40
22	1,529.0	209,154	136.8	..	..	2	1	6	26	77	79	7	512	92
Total.....	13,226.0	2,331,491	176.3	1	..	113	10	68	305	719	760	84	5033	1290

BOROUGH OF BROOKLYN.

1	233.0	21,851	93.8	..	..	..	..	1	3	8	8	..	57	10
2	97.7	6,894	70.6	..	..	..	..	..	5	3	2	..	23	4
3	161.4	15,910	98.6	..	..	..	..	..	1	8	5	1	47	6
4	111.3	10,477	94.1	..	..	..	..	..	4	6	2	..	35	10
5	119.4	19,401	162.5	..	..	..	..	2	2	14	16	2	63	32
6	302.9	46,437	153.3	..	..	6	..	2	4	24	34	1	150	67
7	458.5	44,037	96.0	..	..	2	..	..	6	15	7	..	95	17
8	1,843.2	82,687	44.9	..	..	..	1	3	6	30	23	3	192	41
9	623.6	50,501	81.0	..	..	1	..	2	6	21	9	2	150	42
10	318.7	41,238	129.4	..	..	..	..	1	6	11	6	2	87	32
11	252.6	21,659	85.7	..	..	1	..	1	3	20	24	1	100	28
12	663.1	29,262	44.1	..	..	1	1	1	2	19	19	3	119	43
13	230.3	30,091	130.7	..	..	..	..	1	2	10	9	..	55	21
14	282.6	33,329	117.9	..	..	..	..	4	6	17	17	3	81	38
15	244.8	35,887	146.6	..	..	2	..	2	2	10	12	..	72	32
16	244.8	68,244	278.7	..	..	1	..	2	5	9	15	1	99	27
17	823.3	70,346	85.5	..	..	9	..	5	18	24	22	6	193	69
18	873.0	35,708	40.9	..	..	..	..	4	9	12	11	4	112	35
19	413.8	44,860	108.4	..	..	1	1	..	5	9	12	1	101	21
20	461.4	27,463	59.5	..	..	2	..	1	8	8	7	2	88	18
21	483.2	78,741	163.0	..	..	3	..	2	8	15	19	2	135	39
22	1,361.6	81,283	59.7	..	..	..	1	1	16	25	16	2	202	43
23	736.0	65,561	89.1	..	..	..	..	2	14	20	19	3	173	25
24	1,198.5	80,466	67.2	..	..	1	..	4	6	30	21	2	194	42
25	567.8	63,597	112.0	..	..	..	..	..	12	15	13	7	146	25
26	3,590.2	177,963	49.5	..	..	6	1	6	20	48	41	3	390	83
27	400.7	76,000	189.6	..	..	1	1	1	4	11	18	1	121	37
28	884.4	77,451	87.6	..	..	2	..	1	13	32	20	1	264	41
29	3,800.0	72,351	19.0	..	..	2	..	2	7	23	25	3	225	40
30	5,401.1	76,406	14.1	..	..	4	..	5	11	24	28	5	249	51
31	6,312.3	30,988	4.9	..	..	..	1	..	6	9	12	1	81	12
32	5,479.5	17,419	3.2	..	..	..	..	..	3	1	1	2	22	3
Total.....	38,977.8	1,634,508	41.9	..	..	45	6	56	223	531	493	64	4121	1034

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BOROUGH OF THE BRONX.

Wards.	Area in Acres.	Population, U. S. Census 1910.	Number of Persons to the Acre.	Typhoid Fever.	Smallpox.	Measles.	Scarlet Fever.	Diphtheria and Croup.	Pulmonary Tuberculosis.	Lobar Pneumonia.	Broncho-Pneumonia.	Diarrhoeal Diseases.	All Causes.	Deaths of Children Under 5 Years.
23	4,267.0	268,880	63.0	1	..	12	1	5	55	106	85	4	676	162
24	22,255.8	162,062	7.3	..	..	3	1	10	36	96	53	8	629	112
Total.	26,522.8	430,942	16.2	1	..	15	2	15	91	202	138	12	1305	274

BOROUGH OF QUEENS.

1	4,650.0	61,763	13.3	..	..	4	2	..	10	20	51	3	175	65
2	14,700.0	105,219	7.2	1	..	2	..	2	21	25	17	2	240	45
3	22,000.0	37,171	1.7	..	..	1	..	2	6	21	11	..	113	14
4	36,600.0	67,412	1.8	..	..	..	1	5	21	31	29	3	260	54
5	3,770.0	12,476	3.3	..	..	..	..	..	1	4	5	..	36	4
Total.	81,720.0	284,041	3.5	1		7	3	9	59	101	113	8	824	182

BOROUGH OF RICHMOND.

1	3,340.0	27,201	8.1	..	..	..	..	..	6	3	4	1	73	14
2	4,130.0	16,871	4.1	1	..	2	..	..	2	8	5	1	60	9
3	10,050.0	19,812	2.0	..	..	3	..	1	3	7	7	..	42	10
4	8,180.0	10,662	1.3	..	..	..	..	..	3	5	5	1	40	9
5	10,900.0	11,423	1.0	..	..	..	..	..	..	5	2	..	25	4
Total.	36,600.0	85,969	2.3	1	..	5	..	1	14	28	23	3	240	46

DEATHS ACCORDING TO AGE GROUPS, FEBRUARY, 1920

Boroughs.	All Ages.	Under 1 Year.	1 Year and under 2.	Under 5 Years.	5-15 Years.	15-25 Years.	25-45 Years.	45-65 Years.	65 Years and over.	Colored.	Chinese.
Manhattan.	5,033	676	396	1290	163	382	1,318	1,050	830	310	20
The Bronx..	1,305	166	56	274	44	108	335	306	238	21	..
Brooklyn...	4,121	572	283	1034	119	290	961	911	806	103	4
Queens.....	824	100	51	182	36	49	208	190	159	14	..
Richmond..	240	26	15	46	7	18	49	54	66	10	..
City of N.Y.	11,523	1,540	801	2,826	369	847	2,871	2,511	2,099	458	24

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INFECTIOUS DISEASES.

Number of Cases Reported in the City of New York, by Boroughs, During February, 1920, and February, 1919.

	Manhattan.		The Bronx.		Brooklyn.		Queens.		Richmond.		City.	
	February		February		February		February		February		February	
	1920	1919	1920	1919	1920	1919	1920	1919	1920	1919	1920	1919
Typhoid Fever	5	14	....	2	8	4	1	...	...	...	14	20
Typhus Fever	....	....	....	....	....	....	...	...	...	...	....	....
Malaria	2	....	....	....	....	....	1	...	...	...	3	....
Small Pox	1	....	1	....	....	....	...	...	...	...	2	....
Measles	3,297	117	1,409	18	2,523	28	443	4	112	3	7,784	170
Scarlet Fever	192	191	103	87	215	222	49	38	9	15	568	553
Whooping Cough	305	17	120	4	291	16	86	7	14	7	816	51
Diphtheria and Croup	517	591	173	219	439	433	85	86	15	30	1,229	1,359
Leprosy	....	....	....	....	....	....	...	...	...	...	....	....
Mumps	248	60	59	6	128	88	11	8	9	29	455	191
German Measles	36	19	8	2	49	11	4	...	1	...	98	32
Chicken Pox	263	154	57	24	138	171	23	48	11	15	492	412
Glanders	....	....	....	....	....	....	...	...	...	...	....	....
Anthrax	....	2	....	....	1	....	...	...	...	...	1	2
Rabies	....	....	....	....	....	1	...	...	...	...	....	1
Tetanus	....	....	....	....	....	....	...	...	...	...	....	....
Pellagra	....	....	....	....	....	....	...	...	...	...	....	....
Pulmonary Tuberculosis	580	730	149	192	403	324	14	28	17	20	1,163	1,294
Other Tuberculous Diseases	....	....	....	....	....	....	...	...	...	...	....	....
Syphilis	816	891	115	201	169	315	34	23	19	24	1,153	1,454
Gonorrhoea	223	184	58	23	113	85	17	1	4	...	415	293
Cerebro-Spinal Meningitis	16	5	1	9	14	4	...	5	1	2	32	25
Poliomyelitis	1	1	....	....	1	....	...	...	...	...	2	1
Hookworm	....	....	....	....	....	....	...	...	...	...	....	....
Trichinosis	....	....	....	....	....	....	...	...	...	...	....	....
Influenza	14,959	2,992	1,500	942	10,519	1,613	2,006	414	896	161	29,880	6,122
Pneumonias	5,041	1,112	941	241	3,724	568	531	139	211	51	10,448	2,111
Total	26,502	7,080	4,694	1,970	18,735	3,883	3,305	801	1,319	357	54,555	14,091

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MONTHLY METEOROLOGICAL SUMMARY.

FEBRUARY, 1920

Date.	Temperature. (Degrees Fahrenheit.) Maximum.	Minimum.	Mean.	Departure of Mean from Normal.	Relative Humidity. (Per Cent.) 8 a.m.	Precipitation (Inches.) Rain.	Snow.	Wind. (Miles per hour.) Average Velocity.	Prevailing Direction.	Maximum Velocity and Direction.	Sunshine. Number of Hours.
S 1	27	—3	12	—18	83	T	T	8.5	NE	19 N	5.2
M 2	37	20	28	— 2	100	0	0	11.0	SW	23 W	4.7
T 3	49	32	40	+10	100	.01	0	12.6	N	25 NE	0.8
W 4	37	24	30	0	72	1.58	5.5	22.4	NE	32 NE	0
T 5	29	25	27	— 3	86	1.38	6.0	32.8	NE	42 NE	0
F 6	33	25	29	— 1	95	1.47	5.5	28.6	N	38 NW	0
S 7	38	30	34	+ 4	62	.02	0.5	36.4	NW	48 NW	10.2
S 8	35	25	30	0	65	0	0	28.8	NW	40 NW	7.8
M 9	35	23	29	— 1	68	0	0	16.3	NW	28 NW	10.4
T 10	39	27	33	+ 3	97	.09	0.8	18.3	S	35 S	4.5
W 11	40	30	35	+ 5	63	0	0	12.6	W	40 NW	8.4
T 12	40	32	36	+ 6	70	T	0	11.5	E	22 E	6.7
F 13	39	30	34	+ 4	88	.35	1.0	20.9	NE	33 N	1.7
S 14	44	30	37	+ 7	66	.11	0	19.0	S	33 SE	10.1
S 15	41	12	26	— 4	76	.79	T	40.0	W	65 NW	4.0
M 16	22	7	14	—17	53	0	0	27.3	W	38 W	10.7
T 17	37	15	26	— 5		0	0	27.0	SW	37 SW	8.6
W 18	49	34	42	+11	50	T	0	17.0	S-SW	30 SW	10.1
T 19	41	18	30	— 1	95	.07	0.3	26.6	NW	46 NW	4.7
F 20	33	17	25	— 6	54	0	0	18.8	NW	33 NW	10.6
S 21	35	23	29	— 2	54	.46	3.8	14.0	SE	25 SE	2.4
S 22	40	30	35	+ 4	100	.07	0.1	11.5	N	18 E	4.8
M 23	36	29	32	0	83	.05	0	9.8	E	18 NE	0
T 24	42	28	35	+ 3	98	.05	0.1	13.8	N	33 NW	0.7
W 25	34	22	28	— 4	71	.06	0.6	37.5	NW	52 NW	8.0
T 26	26	11	18	—14	55	0	0	39.0	NW	55 NW	11.1
F 27	20	6	13	—19	46	0	0	32.7	NW	53 NW	11.0
S 28	32	14	23	—10	51	T	T	18.6	S	38 S	4.3
S 29	36	25	30	— 3	73	T	T	13.7	N	29 NW	2.5
.....	....	....	....	....	....	.....	.....	....	.....	.....	....
.....	....	....	....	....	....	.....	.....	....	.....	.....	....
Month	Mean 36.1	Mean 22.1	Mean 29.1	Blank	M'n 74	Total 6.56	Total 24.2	Mean 21.6	Prev'l'g NW	Blank	Total 162.0
Normal	37.7	23.6	30.7	Blank	73	3.87	10.3	14.5	NW	Blank	Possible 309.5

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DIRECTORY OF DEPARTMENT OF HEALTH.

OFFICES.

Headquarters: 505 Pearl Street, Manhattan.....Telephone, 9400 Worth
Borough of The Bronx, 3731 Third Avenue.....Telephone, 1975 Tremont
Borough of Brooklyn, Flatbush Avenue and Willoughby Street.....Telephone, 4720 Main
Borough of Queens, 372-374 Fulton Street, Jamaica, L. I.....Telephone, 1200 Jamaica
Borough of Richmond, 514-516 Bay Street, Stapleton, S. I.....Telephone, 440 Tompkinsville
Office Hours—9 a. m. to 5 p. m.; Saturdays, 9 a. m. to 12 m.

HOSPITALS FOR CONTAGIOUS DISEASES.

Manhattan—Willard Parker Hospital, foot of East 16th Street. Telephone, 1600 Stuyvesant.
The Bronx—Riverside Hospital, North Brother Island. Telephone, 4000 Melrose.
Brooklyn—Kingston Avenue Hospital, Kingston Ave. and Fennimore St. Telephone, 4400 Flatbush.
Queens—Queensboro Hospital, Flushing Ave. and Lotts Lane. Telephone, 2600 Jamaica.

LABORATORIES.

Diagnosis Laboratory, Serological Laboratory, 505 Pearl Street. Telephone, 9400 Worth.
Research Laboratory, Chemical Laboratory, Vaccine Laboratory, foot of East Sixteenth Street. Telephone, 1600 Stuyvesant.
Antitoxin Farm and Laboratory, Otisville, N. Y.

BABY HEALTH STATIONS.

Manhattan.

1.	172 East 3d St.	8.	224 West 63d St.	15.	348 East 74th St.	22.	73 Cannon St.
2.	513 East 11th St.	9.	326 East 11th St.	16.	205 East 96th St.	23.	95 Suffolk St.
3.	306 Avenue A.	10.	114 Thompson St.	17.	209 Stanton St.	24.	206 Madison St.
4.	443 1st Ave.	11.	315 East 112th St.	18.	343 Pleasant Ave.	25.	214 Monroe St.
5.	225 East 107th St.	12.	244 Mulberry St.	19.	108 Cherry St.	26.	289 Tenth Ave.
6.	241 East 40th St.	13.	508 West 47th St.	20.	197 Hester St.	27.	95 Forsyth St.
7.	174 Eldridge St.	14.	78 Ninth Ave.	21.	27 Suffolk St.	28.	2155 Fifth Ave.

Brooklyn.

1.	268 South 2d St.	7.	359 Manhattan Ave.	13.	604 Manhattan Ave.	19.	698 Henry St.
2.	621 Fourth Ave.	8.	49 Carroll St.	14.	179 Bedford Ave.	20.	594 Sutter Ave.
3.	208 Hoyt St.	9.	76 Johnson Ave.	15.	296 Bushwick Ave.	21.	167 Hopkins St.
4.	144 Navy St.	10.	233 Suydam St.	16.	994 Flushing Ave.	22.	592 Park Ave.
5.	2346 Pacific St.	11.	323 Osborn St.	17.	176 Nassau St.	23.	165 Ten Eyck St.
6.	184 Fourth Ave.	12.	107 Dupont St.	18.	129 Osborn St.	24.	49 Amboy St.

The Bronx.

1.	511 East 149th St.	2.	428 East 133d St.	3.	354 Webster Ave.	4.	2380 Hughes Ave.

Queens.

1. 114 Fulton Ave., Astoria. 2. 22 Maspeth Ave., Maspeth. 3. 753 Onderdonk Ave., Ridgewood

Richmond.

689 Bay Street, Stapleton, S. I.

CLINICS FOR VENEREAL DISEASES.

ADVISORY CLINICS.

Manhattan.

Main Clinic, 505 Pearl Street..... Week days, 9 a. m. to 12 M.
Stuyvesant Clinic, 111 East 10th Street.....
Jefferson Clinic, Pleasant Avenue and 118th Street.
Chelsea Clinic, 307 West 33d Street.....
Washington Clinic, 128 Prince Street..... } Monday, Tuesday, Thursday, Friday, 9.30 a. m. to 12 noon. Wednesday, Saturday, 7.30 p. m. to 10 p. m.

The Bronx.

Tremont Clinic, St. Paul's Place and Third Avenue. { Monday, Tuesday, Thursday, Friday, 9.30 a. m. to 12 noon. Monday, Friday, 7.30 p. m. to 10 p. m.

Brooklyn.

Prospect Clinic, Fleet and Willoughby Streets..... } Tuesday, Wednesday, Thursday, Friday, 9.30 a. m. to 12 noon.
Brownsville Clinic, 64 Pennsylvania Avenue.....
Eastern District Clinic, 306 South Fifth Street..... } Monday, Friday, 7.30 p. m. to 10 p. m.

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CLINICS FOR VENEREAL DISEASES—ADVISORY CLINICS—Continued

Queens.

Jamaica Clinic, 372-374 Fulton Street, Jamaica.... Monday, Wednesday, 10 a. m. to 12 noon. Tuesday and Thursday, 2 to 4 p. m. Wednesday, Saturday, 8 to 10 p. m.

Queens Plaza Clinic, 138 Hunter Avenue, L. I. City. Tuesday, Friday, 10 a. m. to 12 noon. Monday, Wednesday, 2 p. m. to 4 p. m. Tuesday, Thursday, 8 p. m. to 10 p. m.

Richmond.

Richmond Clinic, Bay and Elizabeth Sts., Stapleton. Tuesday, Thursday, Saturday, 2 p. m. to 4.30 p. m. Monday, Wednesday, Friday, 7.30 p. m. to 9.30 p. m.

TREATMENT CLINICS.

Chelsea Clinic, 307 West 33d Street..... Monday, Tuesday, Thursday, Friday, 9.30 a. m. to 12 noon. Wednesday, Saturday, 7.30 p. m. to 10 p. m.

ANTI-RABIC CLINICS.

Manhattan—505 Pearl Street. Telephone, 9400 Worth. Week days, 1 to 4 p. m.

Brooklyn—Fleet and Willoughby Streets. Telephone 4720 Main. Week days, 10 a. m. to 1 p. m. Sundays and holidays, 10 a. m. to 12 m.

The Bronx—Third Avenue and St. Paul's Place. Tel., 1975 Tremont. Week days, 11 a. m. to 1 p. m.

Queens—Patients attend Brooklyn or Manhattan Clinic.

Richmond—Patients attend Manhattan Clinic.

On Sundays and holidays patients of all Boroughs attend Brooklyn Clinics. Hours on these days 10 a. m. to 12 noon.

Immunization against typhoid fever will be given on request at these clinics.

OCCUPATIONAL CLINICS.

Manhattan—128 Prince Street. Week days, 9 a. m. to noon. Telephone, 9586 Spring.

The Bronx—493 East 139th Street. Week days, 2 to 4 p. m. Telephone, 6399 Melrose.

Brooklyn—Fleet and Willoughby Streets. Week days, 2 to 4 p. m. Telephone, Main, 4720.

Queens—Jamaica, 372-374 Fulton Street, Jamaica, 2 to 4 p. m.; Saturday, 9 to 12 noon. Telephone, 1200 Jamaica.

Corona, 127 46th Street (near Alburtis Avenue "L" Station), 2 to 4 p. m.; Saturday, 9 to 12 noon. Telephone, 3255 Newtown.

Ridgewood, 753 Onderdonk Avenue, Ridgewood, 2 to 4 p. m.; Saturday, 9 to 12 noon. Telephone, 3624 Evergreen.

Queens Plaza, 138 Hunter Avenue. Telephone, 2589 Astoria.

Richmond—Richmond Bay and Elizabeth Street, Stapleton, 2 to 4 p. m.; Saturday, 9 to 12 noon. Telephone, 1558 Tompkinsville.

DIVISION OF NARCOTIC REGISTRATION AND NARCOTIC RELIEF STATION.

Manhattan—145 Worth Street. 2 to 8 p. m. daily except Sunday and holidays.

BRANCH OFFICES AND TUBERCULOSIS CLINICS.

Manhattan—Corlears, 331 Broome Street. Telephone, 7914 Orchard.
Stuyvesant, 111 East 10th Street. Telephone, 2859 Orchard.
Yorkville, 439 East 57th Street. Telephone, 2526 Plaza.
Jefferson, 341 Pleasant Avenue. Telephone, 2375 and 828 Harlem.
Riverside, 481 West 145th Street. Telephone, 9068 Audubon.
Chelsea, 307 West 33d Street. Telephone, 3471 Greeley.
Washington, 130 Prince Street. Telephone, 9586 Spring.
Day Camp, Ferryboat "Manhattan," foot East 90th Street. Telephone, 1581 Lenox.

The Bronx—Tremont, St. Paul's Place and Third Avenue. Telephone, 1975 Tremont.
Mott Haven, 493 East 139th Street. Telephone, 5702 Melrose.

Brooklyn—Prospect, Fleet and Willoughby Streets. Telephone, 4720 Main.
Eastern District, 306 South 5th Street, Williamsburg. Telephone, 1982 Stagg.
Bedford, 420 Herkimer Street. Telephone, 2220 Decatur.
Brownsville, 64 Pennsylvania Avenue. Telephone, 2732 East New York.
Parkville, 974 West Street. Telephone, 1866 Bath Beach.
Bay Ridge, 215 60th Street. Telephone, 2434 Sunset.
Day Camp, Ferryboat "Rutherford," foot of North 2d Street. Telephone, 2611 Greenpoint.

Queens—Jamaica, 372-374 Fulton Street, Jamaica. Telephone, 1200 Jamaica.
Corona, 127 46th Street (near Alburtis Avenue "L" Station). Telephone, 3255 Newtown.
Ridgewood, 753 Onderdonk Avenue, Ridgewood. Telephone, 3624 Evergreen.
Queens Plaza, 138 Hunter Avenue. Telephone, 2589 Astoria.

Richmond—Richmond, Bay and Elizabeth Streets, Stapleton. Telephone, 1558 Tompkinsville.

HOSPITAL DIAGNOSIS STATION.

Manhattan—128 Prince Street. Hours, 2 to 4 p. m., Tuesday, Thursday, Saturday.

SANATORIUM FOR TUBERCULOSIS.

Otisville, Orange County, N. Y. (via Erie Railroad from Jersey City). Telephone, 13 F 1 Otisville.

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ROYAL S. COPELAND, M. D., Commissioner of Health.

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CONDITIONS AFFECTING HEALTH IN THE MILLINERY INDUSTRY

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Early in the work of the reorganized Division of Industrial Hygiene of the Department of Health, attention was called, through numerous complaints, to insanitary conditions in establishments for making hats for women.

Particular consideration was then given this industry and inspections made from time to time indicated that public supervision was needed to protect the health of the workers as well as to prevent certain practices inimical to the general public health.

The following summary of the reports of industrial inspectors made in connection with a sanitary overhauling of millinery establishments throughout the several boroughs of this city is replete with interesting information.

As will be seen from the data, there are so many different industries contributing to the millinery business that it is very difficult to estimate definitely the industrial hazards peculiar to the millinery trade as a whole. The following materials and activities enter into millinery manufacturing:

1. Artificial Flowers.
2. Velvets.
3. Frame Making (Buckram, Straw, Wire).
4. Feathers (Treating, Finishing and Dyeing).
5. Dyeing.
6. Assembling.
7. Selling.

The ribbon and silk industries were not included in this work as there are but few of these factories in this city.

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Artificial Flowers.

Certain branches of the millinery industry are more hazardous than others, by reason of the materials and processes employed, as well as because of conditions under which the work is done.

The making of artificial flowers probably carries the greatest menace to the health of the worker. In manufacturing artificial flowers the following materials are used:

Brazil Wood	Carmine
Madder Lake	Garancine
Salt of Tartar	Salt of Potash
Various Alkalies	Various Strong Acids
Alum	Flour
Starch	Indigo
Arsenic (Schelle's Green)	Prussian Blue
Blue Stone	Wood Alcohol
Chrome Yellow	Gamboge
Annotto	Lead (White most frequently)

Zinc Oxide

Various kinds of machinery are necessary to the manufacturing of artificial flowers. Many of these are dangerous. Some are:

Variously shaped knives	Drying Drums
Dye Plates	Hammers
Steam Funnels	Punch Machines
Power Machinery for special purpose	

The following is a list of materials most often used in the manufacture of artificial flowers:

Feathers	Anilin Dyes
Muslin	Cotton
Leather (Kid)	Cambric
Batiste	Gauze
Crepe	Silk
Velvet	Paper (colored)
Glass (Powdered)	"Flock" (Wool Dust)
Wire (Steel)	Wool
Silken Filaments	Red Lake (Bloom Powder)
Gum (Arabic)	Varnish (Shellac and Wood Alcohol
Paste (starch or flour)	Glue (animal and vegetable)

In considering reforms in an industry it is always wise to consider traditions.

The making of artificial flowers probably is one of the oldest of modern industries. In the early and middle part of the nineteenth century artificial flower making flourished in France and in England. In the latter country some firms produced artificial flowers to the value of between 8 and 10 thousand pounds sterling annually. The most beautiful work in this art, as well as the most accurate, is credited to France.

Few men, comparatively, were employed in this undertaking. Making of artificial flowers was done mostly by women, girls and children, whose average earnings per day amounted to about one shilling, eight pence. It is stated that, in certain instances, the very young received only their board and lodging as payment for services.

The first investigation of this industry of which record is found was made in England in 1860, when the Children's Employment Commissioners instituted in-

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quiries. Mr. Lord, who made this initial investigation into artificial flower making, found that there were two busy seasons in the trade; one from August to November, and the other from February to May, during which stocks of artificial flowers were accumulated in preparation for the winter and summer festivals. During these rush seasons the young hands worked unusually hard. Sometimes, it is recorded, many worked from 15 to 18 hours a day, and at times, many worked all night. Payment being by piece work, employees fell into very irregular habits; some would shirk work on Mondays, while others would include Tuesdays, and, in order to make their usual weekly pay, would try to catch up, by health-destroying severity of labor, in the latter days of the week.

Owing to the bad conditions under which this work was performed eyes not infrequently were dimmed, and sight was weakened by the dust floating about the work rooms. Stamping, coloring, and varnishing were done by adults, but the remainder of the work was executed by young girls and little children—for instance: gumming, waxing, dusting (blooming), twisting, wiring, and threading.

Originally, in the manufacture of artificial flowers, all work was done by hand, but today, in this city, a very large proportion of the work is done by machinery.

The best artificial flowers are made of batiste, while florence is used in making leaves. The delicate small leaves are generally made of leather (kid).

Coloring substances are varied. Tinting and permanence being commercial trade secrets, tact and judgment have to be exercised in efforts to protect the workers. Formerly arsenic—Schelle's Green—was generally used, but this has, to a large extent, been supplanted. However, reports of arsenical poisoning of workers in this industry still are made, though inspections of late have failed to find such conditions. It is stated in the trade that only the very cheapest grades make use of arsenical colorings.

From a small, simple, home industry the artificial flower trade has grown so that, today, it holds a most important position in the commercial world, affording employment to many thousands, and producing goods which can be classed as necessary to modern industry.

Health Hazards in Manufacture of Artificial Flowers.

Heating Apparatus.

Gas is extensively used in the several processes, principally in dyeing, especially when preparing or treating different kinds of feathers, and for materials used in making artificial fruits.

Steam, generated by gas, is used in dyeing feathers and in cleaning and preparing plain feathers of chickens, pigeons, geese, and other domesticated fowl, to be made into artificial wings or feather imitation ornaments. These feathers are so touched up by the dyer's art that all shades of nature's most gayly colored birds are accurately reproduced.

Gas is used to furnish heat for drying purposes, as in the case of artificial cherries. In this work small balls are made of cotton, uniform in size, then put into a preparation of starch. They are then put on ventilated shelves in a drying room to "set." This drying room or oven requires a temperature very near 210° F. After the cotton and starch balls are dried, wrapped wires are put on to act as stems, and the artificial fruit is then dipped into troughs of bright red glue—the trough being kept hot by Bunsen burners placed underneath.

Gas is also used to keep different tools hot, such as those used in crimping petals; to heat the moulds used in shaping leaves and foliage; to keep pots of glue warm: and to generate steam which is used in keeping wax at the right temperature.

The almost ever present open flame in a factory, unless the apparatus is set up properly and used with intelligence, constitutes a continuous menace as a fire hazard,

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and from the health point of view. Next in importance to the open flame, as a hazard, are the chemicals used which are often harmful to workers. Chief among these chemicals are wood-alcohol, arsenic, and white lead.

Wood Alcohol.

Spirits are extensively used as a solvent for the various color pigments, and the resulting solution is sprayed on the articles to be dyed—feathers, flowers, grasses, etc. Spraying here is done usually with a hand atomizer, in rooms not always suitable and, further, the workers rarely ever protect themselves by using a mask or wearing rubber gloves.

In the modern up-to-date establishments, the workers stand or sit at a work table, in front of a small exhaust fan, which removes the fumes of the wood-alcohol, as rapidly as they are produced.

Efforts are being made in the older and improperly equipped establishments to have better health protecting devices installed, as well as to educate the workers to avail themselves of protective clothing.

A distinct menace is often found in the fact that wood-alcohol is rarely labelled as such, though Section 124 of the Sanitary Code requires this to be done in all instances. Failure to label wood-alcohol creates a distinct health and fire hazard, because workers, ignorant of the nature of the poison used, often fail to observe the necessary precautions. When it is known that the fumes of wood-alcohol are very poisonous, and, when taken internally, that wood-alcohol nearly always causes blindness or death, there is every reason why it should be properly labelled.

Manufacturers using wood-alcohol often disguise it by artificial coloring or by giving it a trade name; in the instances known, the reason stated was to prevent workmen from drinking it. It has been suspected, nevertheless, that in this way they are able to buy at better prices and, we fear, store this highly inflammable article in excess of the legal, limited, amount.

Arsenic.

Arsenic is not so much used as formerly, because analin dyes have supplanted it to a very large extent. Arsenic, however, is considerably used by manufacturers of the very cheapest grades of artificial flowers. These shops are, as a rule, small affairs, and employ only a few hands. It is with difficulty that they are located and the menace to workers detected.

The hazards from the use of this mineral are too well known and familiar to the public generally to require repetition at this time.

White Lead.

White lead is also less frequently used than formerly, because zinc oxide powder —a harmless product—and one costing much less—may be conveniently substituted. Nevertheless samples, claimed by manufacturers of some artificial flowers, to be zinc oxide or a similar substance, have been found, on analysis in the laboratory, to contain considerable white lead. It is fair, therefore, to conclude that workers often use this dangerous chemical material without being aware of its nature. Further, that inasmuch as the great majority of the workers in the artificial flower business are women and girls, lead is especially undesirable, because of its well-known tendency to affect the reproductive organs of the sex—abortion, sterility and many sexual disturbances having been traced to its use.

Health Hazard, Irregularity of Employment.

Perhaps, one of the greatest menaces to the individual health of workers in the artificial flower industry is the irregularity of the hours of employment.

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Women work in the factory the legal limit and then, in addition, take work to be done at home. The home work, which is thus obtained, it is claimed by both manufacturer and worker, is intended to be done by *other members* of the worker's family, but proof of this is practically impossible.

Tenement houses in which work is done in New York City are required by Section 100 of the Labor Law to be licensed, but records are not kept of the members of each family who really do the work; nor, if records were kept, would it be possible to enforce time restrictions, as are required by Section 6 of Paragraph 77, of the Labor Law, under such circumstances.

Manufacturers appear to keep no separate pay sheets for work performed at home, and give very vague and, at times, absurd answers to inquiries concerning their method of paying for work taken home by their employees.

The character of the home work often done gives a suggestion relative to the practice. Materials are prepared in the factory, where machinery is available for cutting, crimping, or performing the special processes, and the parts ready for assembling are taken home to be done there. This assembling is very simple work, and may be easily done by little children. Exception is taken to the employment of children in industry, but occasion is frequent where small children have been found at this labor. Complaints have not been made because it is most difficult to get evidence that will make prosecution successful, yet the practice of sending this work outside of the shop into homes is a temptation for the employment of small children. No record of the time required in these preparations appears to be kept, nor deduction made from the legal time standard of the individual worker, that is so far as has been our experience in such cases. There is a serious need for some method by which the hours of women and girls, working at home, could be definitely ascertained, and the law prohibiting night work adequately enforced in this industry.

It is difficult to see how this is possible, as long as factory workers are permitted to work in establishments and then, in addition, are permitted by employers to take work to their homes, under the flimsy pretext that it is being done by others of the employee's family, when it is known by both employer and employee that such is not a fact. It is, therefore, suggested that those working in licensed tenements be made to procure their materials from firms who do no manufacturing on their premises, and that firms which do manufacture be prohibited from permitting full-time employees from taking work home on any pretext, or that the pay roll record be made to include time performed under both factory and home conditions.

Child Labor.

In this enlightened age we know that the employment of the very young is not only against the interests of industry, but positively contrary to public health, and is in violation of the law, yet it is surreptitiously being done, though evidence of a positive character for penal prosecution is difficult and well nigh impossible to obtain.

Prohibition of child labor, as defined by Section 70, Article 6 of the Labor Law is therefore difficult of enforcement. Certain stages in the manufacture of artificial flowers are sufficiently simple, as to be possible of performance by the very youngest children—such as, wrapping stems, threading of glass beads, etc., dipping stems and buds into glue, assorting petals, etc., and this is the character of work usually taken to be done at home. Without adequate checking up or supervision it is practically impossible to determine who performs this work when it is distributed into many homes, as stated above.

The great majority of the workers in this particular industry are foreigners. They are notoriously indifferent to the rights of their women and children, and feel that they have a right to urge their families to earn as much money as possible. The

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head of the house considers himself naturally entitled to the results of this labor. While such an opinion is fixed in their minds, these persons will do all in their power to evade laws and escape detection for violation of them. These laws have been enacted for the protection of their own children, but, unfortunately, they do not view them in this light.

Argument, on the other side, is that the millinery season is short, and the demand great, therefore it is reasonable to suppose that employers are desirous of obtaining every available hand, regardless of age or sex, to finish the greatest amount of work in the shortest possible time, and, to swell the family income, the employee aids to the utmost abilities of his family, although frequently to their physical detriment.

Instances are known where manufacturers, who had large orders to be filled, concerned themselves solely with filling these contracts, manifesting complete indifference as to how this was done. Had they had prior warning, the matter would have been one for court action and not personal effort as had to be the case with our present policy of warning before prosecuting.

It is, therefore, suggested that in families in which there are many young children, such home work be under constant supervision, especially after school hours and in the early evenings, and that reports of work assigned to be done at home be made to this Division by manufacturers, and that special inspectors be assigned to supervise this home work, particularly during the rush season, to prevent the employment of very small children, and, especially, school children, in factory work.

The Industrial Commission (N. Y. State Labor Department) Bureau of Home-work Inspection, informs us that they have found numerous instances of child labor in homes, and, further, that it is regrettable to have to state that when these violations are presented to the courts the latter do not appear to consider them as serious; in a large measure this is handicapping proper supervision.

Living in a city, given over to all forms of industrial undertakings, the child labor question is not an acute one, but there is a sufficient number of violations of the law to make this question one which must receive constant and careful consideration. Many persons have radical ideas pro and con on this subject, but regardless of personal opinion the law is the final arbiter and should be carefully enforced.

It is the general belief that those who employ minors surreptitiously do so because they have not carefully investigated conditions relative to such employment. Many admit that they have not made any actual study of the relative economic value and, on the surface, it appears attractive. Manufacturers, as a result of careful experiment and study, know exactly the relative economies of different kinds of engines, boilers, machines, materials and processes. It is curious and interesting to note the great amount of study that is given to the machine and its processes and how little is given to man himself. Inanimate things, which go into manufacturing, are scientifically analyzed, compared, and then chosen, but science stops short when it comes to the human element. No thought is given as to whether this or that grade of labor is best, whether this wage or that wage is most productive, whether this age of worker is best or one materially younger. Indeed those who have had depths of experience with labor are outspoken in their denunciation of child labor. Labor problems are not decided by accurate methods. Some day the study of the human element in manufacturing will get the attention it needs. Some day there may be a chair in our great universities, a chair dealing with humanity—then probably our captains of industry may be taught how to deal aptly and scientifically with the human element of production. When that time comes, and God speed the day! problems of child labor and, in fact many other labor problems, will be found easier of solution than they are today, and, perhaps, all will abide by just and necessary regulation, and prohibit all child employment in industry.

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Dr. McKelway, in his admirable manner, speaks of boys and girls as "Little Men" and "Little Women," and offers a splendid resolution for the careful consideration of the public, and his ideas are very pertinent here. They are as follows:

"*Resolved,* That childhood is endowed with certain inherent and inalienable rights, among which are freedom from toil for daily bread; the right to play and to dream; the right to the normal sleep of the night season; the right to an education, that we may have equality of opportunity for developing all that there is in us of mind and heart."

It is therefore a crime against the very nature of childhood to put these little creatures into industrial employment. A normal childhood is a prerequisite to a normal adulthood and a normal citizenry. We need not more science but more conscience. To employ children is a tax that no nation can afford to pay. It is a costly blunder from the standpoint of national economy. The wage earning function, the function of industrial production, belong to the adult population. The function of children is to be children—and to grow up into efficient, healthy men and women. The greatest vocation of all is life, and society is the ultimate employer.

Velvets.

Historical.

It is of common knowledge that velvet originated in Europe, and not as many would have us believe, in Asia.

The method of weaving plain velvet was invented at a time when the draw loom, for pattern, had attained great perfection and it was only natural that pattern weaving should then be attempted widely, although very few specimens of velvet pile fabrics can be found of earlier date than the fifteenth century.

It is well known that textiles having a similar appearance to velvet with a pile were made in much earlier times. Some ancient specimens of tapestry with a knotted and cut pile are so closely woven that a square inch equals as many as a thousand separately tied tufts of finest silk, and it is accordingly very difficult to distinguish such tapestry from the best productions of the velvet weaver's art. However, it is a safe assertion to state that specimens of cut silk velvet of earlier date than the fifteenth century are extremely rare.

Roving Bobbin Stripper.

The roving waste is generally stripped from the bobbins by cutting it off with a sharp knife, which, with unprotected tools, as used is an accident hazard both to the bobbins and the hands of operatives. Accidents in this undertaking occur quite often.

Finishing Velvets.

Finishing may be classed under the following three headings:

(a) Preparation for dyeing.
(b) Dyeing.
(c) Finishing of the dyed product.

In the preparation, the first point demanding consideration is the removal of the "size" carried by the cloth. The most useful agent for this purpose is a diastase product, the application of which is generally well known to the trade and therefore a detailed description may be omitted from consideration.

The material, after treatment with diastase, is washed with hot water, followed by washing with cold water. As soon as the water is removed, by mechanical means, it is dyed.

After dyeing, the material passes to the brushing machine where the pile is raised and the under-side is singed by passing through a singeing machine. In a

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majority of the establishments, gas singeing machines are used for this purpose—the material having to be passed from two to four times to complete this process. Then the burnt portions are removed and the cloth well washed.

Perhaps, the most favored coloring matters are those belonging to the substantive class, but when higher properties of "fastness" are in requisition, sulphide dyestuffs are used. For very bright colors, the basic dye stuffs are the only ones used. Direct dyes are applied, as in cottons, adding for the paler shades differing amounts of sulphate of soda to the liquor. To brighten dyes, acetic acid is used. Actual dyeing with basic dyes is done on a tannin-antimony mordant. To increase "fastness" of dyeing produced by basic dye stuffs, it is usual to treat later with weak solutions of tannin-antimony. Pale shades in general, even for the bright colors, are produced with the basic dye stuffs, but here it is generally necessary to bleach the goods beforehand. Bleaching solution is made to the required degree of strength in a stone cistern and the cloth is passed through it by rollers and at once wound onto a receiving roller. Four to six passages are generally required to give satisfactory "bottom." After this course of chemicalizing, the cloth is washed, scoured with soap, if needed, in the ordinary manner, and then dried by passing over heated cylinders or by use of a drying room.

The velvet or velveteen is then ready for the brushing machine; this has usually round brushes, though occasionally square ones are used, and a gum or dextrine finish is applied to the under side of cloth—known to the trade as "S.O.S." During this process the cloth is passed right side over cylinder drying machine and, after drying, the material is again brushed and sheared in two to four passages. Then the cloth is again washed. To increase the lustre, and add to the generally good appearance of the product, it is first slightly brushed with stearine, provided the goods are hot enough to receive it properly, this condition being essential to improve the lustre.

Blacks and navy blues require painting with Prussian blue to attain the height of brilliance and fullness demanded of such tints. This is applied on the brushing machine, after the cloth is well dried. Solution of Prussian blue is made by mixing the Prussian blue in powdered form with a linseed oil varnish. Machines for doing this are variously constructed. Many are similar in type, the dye being taken from a trough by a roller and the amount controlled by a regulator called by workers, "The Doctor." As the dye is applied, the cloth is approaching other rollers, and is brushed evenly, mechanically.

Having dyed the velvet to the color desired, it is then dried carefully by hanging in a compartment heated to a temperature of between 40 and 50 degrees Centigrade. Careful drying requires, usually, from 3 to 4 days.

There is a peculiarity about this industry which does not usually apply to others, and that is that certain months of the year are admittedly bad for these dye houses; the heavy humid atmosphere outside very materially affects working conditions within the factory, adding disadvantages to the working staff and, more or less often, affecting their health and physical comfort.

The chief disadvantages arise from the following conditions; the presence of floating particles, of steam and haziness of atmosphere causing difficulty of observation, and a large amount of aqueous condensation when there is so much heat and moisture.

Health Hazards.

The dangers from moving machinery, particularly such as requires sharp knives and scissors, and which is difficult to adequately and properly guard.

The presence of moisture more or less continuously.

The use of acids and alkalies in watery solutions in the presence of conditions particularly suitable for irritating the skin and other sensitive organs.

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The presence of water, and slippery floors unless properly covered with removable slats.

Ventilation sufficiently free to make the worker comfortable interferes with the process, and workers not appreciating the hazard expose themselves to outside chilling conditions when overheated. These irregularities of temperature and moisture must, with time, more or less seriously affect the health of workers.

Myositis is common, and the employee who has been at this form of work for any length of time frequently shows deposits similar to those observed in rheumatoid arthritis.

To improve these conditions, where the manufacture is considerable, processes materially different from present methods, and which are practical, will have to be devised; otherwise the health of workers in this special industry will be more or less seriously affected, and the degenerative diseases of adult life very materially hastened.

Buckram for Hat Frames.

Buckram for hats is finished with a solution which contains dextrine, fish glue, buffalo hide glue, gelatin and water. The glues and gelatins are dissolved in hot water, and then mixed with dextrine while warm. The whole mixture is then boiled for 8 to 10 minutes. The goods, thoroughly mixed with the above, are then passed through the mangle.

For waterproofing and stiffening shellac in solution with alkali is used. To make the goods absorb a proper amount of the stiffening and waterproofing solution it is necessary to let it lie in the bath for at least an hour. After ageing for this period, the goods are then passed through a weak solution of either sulphuric or acetic acid. This latter procedure is necessary to neutralize the alkali and allow the shellac to set properly. When the goods have passed through the acid bath they should be washed again before being permitted to dry, otherwise the material will become soft—known to the trade by the term "tender." This is the method generally used for goods handled in the open width, and that the goods may dry as finally desired it is stretched over a "stenter" frame which completes the process of buckram finishing for hats. The use of the acid bath following ageing is called in the shop "scouring."

Frames.

In the wire and buckram framing industry of the millinery work, the health hazards are about similar, and conditions affecting individuals are much the same. Details have been given regarding framing where buckram is used in order to show the different processes of the industry and call especial attention to those which, if not performed in the most careful manner and under conditions suitable to workmanship and health, may, at times, very seriously affect the physical welfare and health of workers.

In the wire frame industry, most of the workers are men, especially where hand machines are employed, probably for the sole reason that these wire twisting machines are heavy, and require a strength not usually possessed by women and girls.

These male employes make splendid wages, and are of a high order of intelligence. It is strange that they do not consider the safety of health and limb, and demand better and more wholesome shop environment, as well as efficient protecting devices on their machines. As a fact, they seem quite indifferent to these conditions, and many of them vigorously protest against any attempt to improve ventilation of shops and general tidiness. Disorderliness is usual, and disregard for clear passage ways makes shop conditions under such methods a distinct menace to both health and limb.

In several large establishments repeated visits were necessary to get the most

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common sanitary rules obeyed by the workers. Here it was that unclean toilets were most difficult of correction, and it was only by the most intensive efforts of inspectors, with threats of dismissal by the management, that even a semblance of neatness was approached. It is reassuring, however, to state that employers in these establishments gave every possible assistance, and openly aided in improving unsanitary conditions.

Health talks and lectures were followed by a distinct improvement and it is hoped that a resurvey will show that these conditions have been corrected by the workers and better practices put into vogue.

Straw Dyeing.

White Straw Hats.

White straw hats are generally cleaned with soap and warm water, then carefully rinsed and bleached with a solution of sodium hyposulphite, 3 pounds in 200 gallons water. Should this not bleach to desired tint, the hat is steeped for an hour or more in a weak solution of oxalic acid.

Straw Hat Dyeing.

The straw woven in strips or made into hats is steeped for twelve hours in cold water, and then dipped into a solution of acid wool color, and a bath of Glauber's salts and acetic acid.

In the cheap dyeing, a very simple process is used, which consists of varnishing with a solution of sealing wax, tinted to the desired color, in alcohol, this varnish being applied with a soft brush by hand. Some establishments spray this by a hand machine. Any good spirit varnish may be substituted for the sealing wax solution, but custom determines practice in the shops.

Finishing Straw Hats.

If the hat is to remain white, or a gloss is wanted on the color, the hat is placed on a wooden block and, when dry, a coat of gelatin or a solution of egg albumen is applied. When the gelatin or albumen is dry, a white cloth is placed over the hat and, with a warm iron, the hat is ironed out, and then polished with a fairly hard brush.

Straws Used in Making Hats.

Wheat straw, Tuscan straw, Italian straw, etc., sea grass from South America, for Panamas, chip—usually willow, though many woods may be used; satin wood, wood chips combined with artificial silk, and other fibres, are used.

Artificial silk, *e.g.*, crinolines, which consist of fibres stiffened with glue, is also employed.

Straw Cleaning.

Certain straws are very resistent to cleaning and dyeing, owing to a natural siliceous coating which prevents liquids used for cleaning or dyeing from attacking the straw fibre. This coating may be removed by use of a 2% aqueous solution of soda or potash.

Straws are bleached with sulphur dioxide, in a specially constructed stove; oxalic acid—used in varying strength solution; chloride gas—specially generated; or by use of peroxide of hydrogen, or sodium peroxide.

Straws may be stiffened by using gums, resins, starch, and the like, according to kind of material.

Feathers.

The treating of feathers and the making of feather ornaments is a dirty, dusty, insanitary industry, and no matter how modern the factory in which this work is

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performed, it is very difficult to remove all health hazards; but when, as in this city, a great proportion of the work is performed in ancient, converted houses, mostly old tenements, unsuited for any manufacturing purposes, this labor actually becomes a very hazardous occupation. Large, modern lofts represent the best form of buildings for this trade, but unfortunately such factories are but too few. In many of the old type factories the workers, mostly girls, are grouped in small unventilated, rather dark rooms, formerly a bed or living room for a small family. Toilets are in the hall ways, and, while acceptable to former residents, are wholly unsuited for factory purposes, being accessible to many tenants, and very unsanitary at all times. The premises are uncomfortable and in severe weather bitterly cold and cheerless. The heat is usually supplied by a small cylinder stove in the center of the room, or near a side wall, the coal for which is generally piled on the floor in the immediate vicinity, and the ashes, quite often, are thrown on the floor or placed in a box or container nearby. This is not only very insanitary, but is positively dangerous, as it constitutes a fire hazard of considerable proportions. No small number of these cases were encountered and it was only by considerable effort that such menaces were removed.

The fire hazard in such remodeled establishments is considerable by reason of the character of the premises, wooden floors, stairways, inflammable partitions and the practice of storing merchandise and waste, often so as to reduce aisle space, in violation of the best efforts of the Fire Department and finally the use of stoves for the work, or in the inclement season.

Many manufacturers are of the opinion that it is possible to make greater profits in conducting their business in these obsolete buildings, because of the cheap rent and other misdirected economies. The profits would be greater, if the factory was located in an up-to-date loft building, fitted with modern industrial and sanitary facilities, because (a) insurance is less, (b) production is greater and cheaper because labor of a better class, more contented and healthy is obtainable, which in turn produces a better article and attracts a better market.

Lighting is, as a rule, poor, daylight rarely ever being sufficient, and the artificial light badly placed so as to occasion irritation to the eyes of the operators.

Washing facilities are very often negligible. It is to be regretted, that even in the presence of a statute requiring such convenience, it is difficult to secure proper and comfortable washing facilities. Special effort was made on this one point, and while successful, owing to the indifferent care practiced by workers in using such fixtures, it has been difficult to maintain them in good condition. Water is turned on and left running, very frequently; sinks overflow, because some careless employee left a paper or cloth over the drain.

The operatives, mostly girls, sit at tables littered with feathers and small glue pots, and their lunches are nearly always eaten in the place where they work, usually without the required preliminary washing of the hands; some even fail to clear a space on the work table. One girl was detected eating a piece of meat literally covered with the dirty barbicels gathered by placing this unprotected food on the work bench. At the time, the comment was made that is was difficult to determine whether the worker was eating a sandwich or a bird. Familiarity with filth breeds contempt for its dangers, and these workers seem to be wholly indifferent to the health hazard presented. They do not object to these insanitary conditions, and when asked if they were pleased with their work and their surroundings, even in the absence of employers, they assented without a murmur of remonstrance; even after their attention was called to the menace by our health talks, not a complaint was received. If workers themselves know and make no effort to remedy these insanitary evils, surely there is every reason for public authorities to do so, in order to protect them.

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Proprietors frequently complain of being inspected, and when their attention is called to the many evils existing, reply by shrugging their shoulders. Rarely indeed does one ever follow up any suggestion by endeavoring to improve these deplorable conditions, unless compelled to do so.

Having started in to clean up this industry, efforts were continued to secure employers' assistance and, through the unions of the workers, to obtain their help in this work. It is hoped that when this industry appreciates the many health hazards and workers themselves become convinced that working under such unhealthy conditions is not necessary, they will demand and insist upon better shop conditions. Owners of real estate, finding that employers are meeting the demands of labor by securing proper working quarters, will then endeavor to improve their property, and not endeavor to squeeze out dividends at the expense of the comfort and health of citizens.

Feathers.

Classification.

Feathers are divided into two main classes: (a) imported, (b) domestic. The imported featehrs come from all over the world. Brazil, however, exports most of the feathers used in high class millinery. The following are some of the different varieties obtained from this source: emu, parrot, macaw, toucan, humming bird, garça, the latter being the most valuable. The white heron from which garça plume is obtained furnishes this fine specimen, the plume being taken from the head of the male. In England they are known as ospreys, being furnished by the Brazilian market at the ridiculously low price of one conto of reis per kilogramme.

Most feathers are exported from the northern states of Brazil, and when it is appreciated that each bird furnishes only a very few, and this only at the mating season, what a terrible slaughter there must be to meet the market demands for this plumage.

Feathers of the emus, six to eight inches long, are mostly used in making boas.

A large number of feathers are obtained from the home market, many from wild birds, and a considerable proportion from domesticated species.

Cleaning Feathers.

In preparing feathers for commercial use, they must first be sorted, then cleaned, and, later, dyed. Feathers are used in the millinery industry individually or in groups, or made up into any desired ornament.

Ostrich Feathers.

These feathers are cleaned almost solely with soap and water, taking care not to injure the dye of the feather.

White plumes usually require, in washing, the addition of a little washing blue and some starch.

Some feathers of this character are often washed by rubbing them with powdered magnesia, and then tapping with a brush on a hot metal surface.

The dressing of feathers consists in passing them several times through a strong liquor of raw farina, then pressing them carefully and evenly between two sheets of clean white blotting or filter paper, repeating the process eight or ten times as required.

The barbicels of the plume are then loosened by means of a soft brush, or the feather is drawn barkward between the fingers and the thumb held loosely or the plume may be carefully rubbed in dry potato starch flour; tapioca or sago starch may also be used very successfully for this purpose. Should any of the farina be retained

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in the barbicels, it can very easily be extracted by means of a soft dry brush, and then the feather must be exposed to the air until all odor has disappeared.

White ostrich feathers are cleaned in a weak, clear, cold, oxalate of potash, or ammonia bath, and afterwards passed through a weak solution of Prussian or Paris blue to neutralize the yellow tint left by the cleaning agents.

Raw white feathers must be first thoroughly freed from fatty matters by means of a strong soap and alkaline solution, especially before dyeing to make the dye take evenly.

The quills should be treated separately previous to the cleaning process.

Sometimes new white feathers require bleaching, and this is done by "stoving" with peroxide of hydrogen, having a small amount of ammonia added to make it alkaline. The feathers are steeped in this bath over night; next day the bath is heated to 150° F. for some hours, and then they are carefully rinsed in clean cold water.

The dyeing of feathers will be considered later under the general subject of dyeing.

Toilets.

In most of the modern millinery establishments, up-to-date plumbing fixtures have been given careful attention, and but few irregularities have been found to exist in structural conditions themselves, but it is regrettable to have to state that toilets are not carefully used by workers either male or female.

People in using a public comfort station appear to do so with an utter disregard to the sanitation of this most necessary establishment. In the frontier region a pioneer blazing a way makes a lean-to on which he places this slogan "Leave this place as you find it"—and those who share his initial efforts at comfort generally obey his request, but in the use of toilets in stores, factories, and in public places, generally, it is the exception to find a person having a regard for those who are to come after him.

A cleaner can put a place in order, and within an hour it is untidy. Spitters mark the floor; smokers litter it, with used cigarettes, cigar ends, match ends, ashes and the like; readers discard their papers; inconsiderate persons soil the seat and, in fact, as above stated, there appear to be few who have a proper appreciation of their responsibilities in such places.

Frequently toilets are put out of commission by articles thrown into the basins which never were intended to be put into them. Soiled guards are frequently a source of obstructed toilets. Wads of newspaper are also a frequent source of complaint.

Employers and owners endeavor to comply with the statute requirements, but workers do not co-operate, yet, when there is a shortage in toilets, they are the ones directly affected and most seriously inconvenienced.

Industrial inspectors in talks with employees have repeatedly called the workers' attention to the necessary care of these public comfort stations. The Department has caused many hundreds of such places to be placarded with a poster asking such care.

As a result of this campaign there has been some improvement in the use of these stations, but the abuse is far from being corrected. This improvement is a clear indication that ignorance and carelessness are the reasons for such abuse, and it is hoped that, with continued agitation, this discomfort may be entirely removed.

In the small retail millinery shops, toilet accommodations are lamentably lacking, and the efforts of the Division of Industrial Hygiene to compel proper and necessary installation of these necessities for comfort and convenience have been met with strenuous opposition from the real estate owners, who, while admitting the menace

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to health, which the absence of such facilities create, vigorously oppose sacrificing space necessary to install toilets.

In general, co-operation on the part of the owners has been the usual experience and has been most gratifying. Of 154 instances of violations all were corrected by personal effort, and in not a single instance was any effort required other than explaining matters and demonstrating the necessity for such action. All were as promptly corrected as labor and market conditions permitted. In no case has it been necessary to enforce demands in court.

In order to secure further co-operation between employer and employee a poster has been prepared and placed in many establishments asking that all unsafe or unhealthful conditions be reported to the management. The reaction in this regard was splendid, as both management and workmen reciprocated in this effort. Workshops formerly very untidy now have a staff of "safety first" and health supervisors, whose duty it is to see that shop regulations are carried out, and penalties inflicted on those workers who disobey rules.

The Department of Health, through its Industrial Hygiene Division, reported in writing to the management the findings of each inspection where irregularities were ascertained. In this way it was possible to officially inform the management, adequately warn them, and afford opportunity for correction through personal effort. The statistics regarding compliance demonstrated conclusively that this method was most acceptable.

Common Drinking Utensils, Common Towels, Etc.

There is a very trying indifference on the part of the majority of workers' concerning the necessity of using individual drinking utensils, and individual towels.

In instances where individual cups and towels are provided by the management the reaction is disappointing. Where individual paper cups are provided, there is a strong tendency to unnecessary extravagance in their use, and a corresponding carelessness in the disposal of the used articles, which are frequently thrown on the floor, where they constitute a sanitary nuisance as well as a fire hazard.

The same criticism holds good in the use of paper towels, provided to do away with the use of the roller towel so frequently and commonly in use before the regulation forbidding the same was adopted.

Since the health of the workers themselves is so intimately concerned in these matters, it should be taken up carefully by the organizations concerned in labor's welfare, and an intensive educational campaign waged to impress upon them the importance of observing sanitary precautions, if they are to remain well; since only through intelligent co-operation and consistent compliance can improvement in working conditions be attained.

SPECIAL CHEMICAL HAZARD.

In several of the processes, some manufacturers are wont to use individual chemicals which, if properly used and in suitable shop conditions, present no special hazard, but in the instances encountered, these mean special hazards to the workers, not generally known and appreciated. The workers themselves are usually unaware of the dangers to which they are exposed by their occupation.

There are reasons given for the practices observed, but when it is appreciated that no reason can be accepted for a condition in any industry which directly affects the health of the worker, secrecy of process and the practice of withholding such information from workers directly exposed to irritation and danger must give way, notwithstanding the cheapness of manufacture.

Benzine, benzol, turpentine, wood alcohol, analin, essential oils, petroleum, and similar chemicals are quite often found masquerading in the millinery industry under

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trade names or disguised under factory cognomens, entirely unfamiliar and unknown to all but the individual responsible for the new nomenclature.

Benzine.

When coal tar is distilled, the substance that comes off first is benzine, a colorless liquid with a familiar odor. It is very poisonous. Persons sent into vats to clean or to do repair work, without carefully clearing the container of all fumes, have been repeatedly overcome, and in a tank at Riverside Hospital one of our employees was killed while entering a tank to determine the supply of naphtha on hand.

Instances are reported where tanks have been washed out several times and the fumes still remained sufficient to occasion distress. Death may occur in a few minutes, the poison paralyzing the nerve centers which are essential to life.

Prolonged inhalation of the fumes in small amounts, such as would occur in a badly ventilated shop using this material, would cause a destructive effect on the blood cells, both white and red, and seriously affect the health of the worker.

Lehman experimented with different benzines, letting animals inhale fumes, and found that these were very irritating to the respiratory organs, and occasioned muscular twitchings, and a slowly increasing narcosis. Benzine, internally, is poisonous, the lighter being more so than the heavier variety.

Experimenting with prisoners in Bucharest, he found that administering benzine by inhalation, as one would with chloroform, some individuals proved quite insusceptible even to large doses, but the majority were quickly sensitive to such influence, manifesting dizziness, nausea, smarting of eyes, after inhaling five to fifteen grams within 7 to 12 minutes; in some instances the burning in the chest and drowsiness was considerable. Larger doses caused sleep, and anaesthesia was succeeded by nausea, vomiting, headache, dizziness, depression and drowsiness, etc. Absorption through the skin produced local symptoms only.

Industrial Poisoning by Inhalation.

Dufour speaks of the excited gaiety of girls employed in poorly ventilated dry cleaning establishments, a gaiety soon yielding to depression, headache, clouded mentality, and anæmia.

The effects, therefore, in a case of acute poisoning by inhalation of moderate amounts of the fumes resemble mild alcoholic intoxication, and in works where the employees are familiar with the poisonous conditions they frankly speak of such antics as "Naphtha Jags."

Here mild cases of poisoning are found in dry cleaning establishments, where employees have been cleaning out vats or washing machines, or cleaning benzine cylinders. There have been no cases of chronic benzine poisoning encountered in our work so far. In dry cleaning establishments and in garages there are noted instances of dermal irritation, due to the irritating effects of the fumes or fluid used in cleaning, and special irritation of the hands of mechanics is not infrequent. Benzine causes many skin lesions but so far we have not encountered any of them.

Benzol.

Benzol is often used as a solvent for rubber, fats, gums, celluloid, and is often used in industry. In industry we find this chemical used in either the crude state, as commercial or as pure benzol. The action of all grades is similar, except that the first two are more irritating than is the latter, probably incident to the presence of toluol, which is decidedly more toxic than benzol.

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Parafin.

Workers using this constantly are known to develop a form of warts (multiple papilloma) and, at times, a peeling of the top layer of the skin, closely resembling a disease known as pemphigus or weeping eczema, but as soon as the irritant is removed or work changed, the skin irritation ceases.

Turpentine.

This is a marked irritant of the skin, facilitates the absorption of lead, and is known to seriously affect the sight. Workers painting on china ornaments have had to discontinue this form of labor quite frequently, owing to the irritating effects of the fumes on the hands and eyes.

The trade knows this chemical as "turps," or spirits, and, to disguise it, is is usually colored with a pink tint and, in the instances met with, such trade names as "Eccol" have been given this colored mixture. Under such a term it would be impossible for a worker to determine the nature of the chemical used in the work.

DYEING.

Dyeing reaches its acme in the millinery industry. All tints, shades, and colors, veritably a rainbow or riot of color, here finds opportunities for display and effect.

While success should be counted by the perfection of workmanship, unfortunately, in industry, the commercial aspect takes precedence, and it is the hope of being able to furnish attractive materials at prices unapproachable by others that causes producers to disregard conditions which hazard the health.

The dye industry, while a comparatively new undertaking in this country, has opened many interesting opportunities, though carrying in its train vocational ailments which have not been heretofore within the experience of our industrial medical profession. Many of the ailments and complaints peculiar to the chemical industry are here magnified in intensity and frequency.

The effects of handling anilin products, even under the most suitable conditions, have given serious concern to industrial sanitarians. The experiences of Lehman and others show that the resisting powers of workmen vary; some cases develop quickly and from slight exposure, while others appear to manifest apparent immunity. Some of the cases are quite severe while others are mild and indifferent in character.

Where the fumes of one of the anilin dyes are present, the air of the shop is more or less permeated with small particles, oftentimes heavier than the air about, and, on inhalation, many minor troubles may be experienced: as, lack of appetite, constipation, headache, diarrhoea, and the like. Often times, in the more seriously affected, muscular pains, not unlike muscular rheumatism or chronic backache, may be noticed. If these were the extent of the discomfort occasioned they would be of slight or no consequence but, as a fact, serious symptoms, more or less permanent, have been observed.

Anilin Poisoning.

Poisoning with one of the anilin dyes is much more likely to develop on a murky, cloudy, damp day, than on a bright, clear sunshiny one. Poisoning is also more likely to occur in factories where combinations with anilin are being used, as when mixed with nitric, or chlorine or similar irritating chemicals. In a case observed, the following history was obtained. The worker arrived punctually, and went to work apparently well and in good spirits, but after being employed a short time, two hours it is stated, became acutely ill, very pale, complained of a violent headache, and vomited slightly, then syncope developed quickly and the patient was removed to the hospital for treatment. This was no doubt a person unusually susceptible and the poison rapidly took effect.

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When this material is worked the ventilation should be free and the air good. The fumes being heavy, the work should be below the worker. It is advised that, when working in this material, as soon as one observes any unpleasant effects—headache, dizziness, nausea, chilliness, sweating, spots before the eyes, the symptoms being alone or in one of several combinations, the worker should forthwith be removed to the outer air, placed in a prone posture and fanned vigorously.

Anilin may be absorbed through the skin, by means of the clothing which becomes saturated with it or with its compounds. Skin absorption is as dangerous as inhalation, for which reason workers should be required to bathe and change their clothing often, and, when possible, wear materials which will prevent, as much as possible, penetration to the skin.

Where the fumes are present, workers should be made to wear masks, goggles and gloves; many employers furnish these, but, owing to their ignorance of the dangers, workers frequently ridicule each other for precautionary measures, and it is difficult to get them to properly protect themselves.

Analin often affects the skin and causes several varieties of skin troubles. The worker does not usually suspect the origin, but on its being detected, he quickly improves under proper treatment and change of occupation.

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SUMMARY OF VITAL STATISTICS FOR THE MONTH OF MARCH, 1920.

There were 7,128 deaths, giving the rate of 13.67 per 1,000 of the population, reported during the month, as compared with 8,303 deaths and a rate of 16.83 during the corresponding month of 1919—a decrease in the absolute figures of 1,175 deaths and in the rate of 3.16 points. This is equivalent to a relative decrease of 1,609 deaths. This favorable showing was due to the fact that in March, 1919, there prevailed a recrudescence of the pandemic of influenza which, beginning in September, 1918, reached its height in November of that year, and declined towards the latter end of December, only to break forth again with considerable effect on the mortality of the winter months of 1919. This is very evident from the following figures: In March, 1919, there were 875 deaths reported from influenza; 967 deaths from lobar-pneumonia; and, 851 deaths from broncho-pneumonia, making a total of 2,693 deaths from these causes, as compared with 256 deaths from influenza; 485 from lobar pneumonia; and 607 from broncho pneumonia; making a total of 1,348 deaths reported from these causes in March, 1920—a decrease of 1,345 deaths. In March, 1920, there were 651 deaths reported from pulmonary tuberculosis, as compared with 833 deaths from this cause, in March, 1919—a decrease of 182 deaths. There were 136 deaths reported from diphtheria, as compared with 168 deaths in March, 1919—a decrease of 32 deaths.

Another noteworthy feature of the month's mortality was the increase in the number of deaths reported from measles, 125; as compared with 12; and from whooping cough, 74, as compared with 9. Other diseases showing increased mortalities during the month were, cancer, with an increase of 90 deaths; heart diseases, with an increase of 10 deaths; acute bronchitis, with an increase of 24 deaths; and Bright's disease annd nephritis, with an increase of 41 deaths.

The above mentioned statement, as to the greater prevalence of influenza and pneumonia in March, 1919, is corroborated by viewing the mortality from the angle of age grouping. Between 5 and 15 years of age there was a saving of 81 lives; between 15 and 25, of 265 lives; between 25 and 45, of 691 lives; between 45 and 65, of 280 lives; that is to say, these age groups were unfavorably affected by the prevalence of influenza in March, 1919, as compared with the mild type of influenza prevailing in March, 1920.

At the extremes of life, under 5 years of age, there was an increase of 132 deaths, and at 65 years of age and over, an increase of 11 deaths, shown in the month just closed, as compared with March, 1919.

The deaths of 203 non-residents of the city were reported during the month, which, if deducted from the total mortality, would give a death rate during the month of 13.28 per 1,000 of the population.

The number of marriages reported during the month of March, 1920, was 4,641 as compared with 4,316 in the corresponding month of 1919.

During the month, 12,147 births were reported, as compared with 11,768—an increase of 379 births over the corresponding period of 1919.

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POPULATION, MARRIAGES, BIRTHS AND DEATHS, MARCH, 1920.

Boroughs.	Population U. S. Census April 15, 1910.	Estimated Population July 1, 1920.	Certificates Received and Tabulated.			Rate per 1,000 Based on Department Estimate.			Corrected Death Rate. **	Corr'td Death Rate Correspon'g Month 1919.
			Marriages	B'ths	* D'ths	Marriages.	B'ths.	D'ths.		
Manhattan	2,331,542	2,829,239	2,718	5,133	3,275	11.32	21.37	13.64	13 23	16.03
The Bronx.	430,980	669,233	411	1,317	756	7.23	23.18	13.30	12 94	17.61
Brooklyn..	1,634,351	2,117,908	1,306	4,586	2,447	7.27	25.52	13.61	14 34	17.17
Queens....	284,041	419,506	165	852	443	4 63	23 93	12 44	13 42	17.50
Richmond.	85,969	105,559	41	259	207	4.58	28.91	23.11	17.86	23.73
N. Y. City.	4,766,883	6,141,445	4,641	12,147	7,128	8.90	23.30	13.67	.....	16.83

*Includes 203 deaths of non-residents of the city, which, if deducted, would give a death rate for the city of 13.28 per 1,000.

**Corrected by redistributing deaths according to borough of residence.

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REGISTERED MORTALITY FROM PRINCIPAL CAUSES.

MARCH, 1920.

	Manhattan.		The Bronx.		Brooklyn.		Queens.		Richmond.		City of New York.	
	Mar.		Mar		Mar.		Mar.		Mar.		Mar.	
	1920	1919	1920	1919	1920	1919	1920	1919	1920	1919	1920	1919
Total, all causes	3178	3662	735	934	2577	2921	478	584	160	202	7128	8303
1. Typhoid Fever	4	3	...	...	2	3	1	...	...	1	7	7
3. Malarial Fever	1	....	...	...	....	....	...	...	...	...	1	....
4. Typhus Fever	....	....	...	...	....	....	...	...	...	...	....	....
5. Measles	65	5	13	1	40	5	4	...	3	1	125	12
6. Scarlet Fever	7	7	...	2	8	12	...	5	...	...	15	26
7. Whooping Cough	33	6	8	...	26	2	7	1	...	...	74	9
8. Diphtheria and Croup	62	76	20	26	39	58	11	7	4	1	136	168
9. Influenza	111	364	33	93	91	326	18	72	3	20	256	875
10. Cholera Nostras	....	....	...	...	....	....	...	...	...	...	....	...
11. Poliomyelitis	....	1	...	...	....	....	...	...	...	...	....	1
12. Other Epidemic Diseases.	16	12	2	7	12	7	2	1	...	...	32	27
13. Tuberculosis Pulmonalis	308	388	57	80	219	273	49	71	18	21	651	833
14. Tuberculous Meningitis	32	29	4	1	5	18	1	4	1	...	43	52
15. Other forms of Tuberculosis	28	35	4	9	17	17	5	4	1	1	55	66
16. Cancer, Malignant Tumor	216	199	62	44	159	128	39	19	10	6	486	396
17. Simple Meningitis	25	15	5	7	11	12	1	1	1	1	43	36
Of which												
17a. Cerebro Spinal Meningitis	6	7	...	...	2	9	...	...	...	1	8	17
18. Apoplexy and Softening of the Brain	27	30	9	7	28	23	4	7	5	6	73	73
19. Organic Heart Diseases	392	453	124	142	449	355	71	75	29	30	1065	1055
20. Acute Bronchitis	48	34	4	8	50	33	2	5	1	1	105	81
21. Chronic Bronchitis	6	8	...	...	6	5	...	1	...	...	12	14
22. Pneumonia (exc. Broncho Pneumonia)	228	374	34	112	182	377	31	65	10	39	485	967
22a. Broncho Pneumonia	301	406	62	104	188	285	45	47	11	9	607	851
23. Other Respiratory Diseases	22	24	10	12	27	29	6	7	...	3	65	75
24. Diseases of the Stomach (Cancer excepted)	20	20	4	5	10	6	4	...	1	1	39	32
25. Diarrhoeal Diseases (under 5 years)	78	57	13	12	83	44	6	7	4	1	184	121
26. Appendicitis Typhlitis	38	18	12	6	34	28	2	6	...	2	86	60
27. Hernia, Intestinal Obstruct	24	21	6	8	29	13	4	3	...	2	63	47
28. Cirrhosis of Liver	13	15	5	...	9	9	1	6	...	2	28	32
29. Bright's Disease and Nephritis	183	177	58	28	220	210	32	40	15	12	508	467
30. Diseases of Women (not Cancer)	11	20	5	3	15	11	5	...	...	...	36	34
31. Puerperal Septicaemia	11	4	3	3	7	6	1	1	2	...	24	14
32. Other Puerperal Diseases	13	21	8	7	17	22	4	2	1	...	43	52
33. Congenital Debility and Malformations	163	155	23	56	124	129	22	22	10	5	342	367
34. Old Age	7	19	6	3	6	8	7	4	4	1	30	35
35. Violent Deaths	158	157	19	21	118	133	20	20	7	11	322	342
a. Sunstroke	....	....	...	...	....	....	...	...	...	...	....	....
b. Other Accidents	146	145	18	19	109	126	20	20	7	11	300	321
c. Homicide	12	12	1	2	9	7	...	...	...	...	22	21
36. Suicide	28	26	5	10	9	18	1	2	2	...	45	56
37. All other causes	497	479	116	117	336	315	72	79	17	24	1038	1014
38. Ill-defined causes	2	4	1	...	1	1	...	...	...	1	4	6

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REGISTERED MORTALITY FROM ALL CAUSES AND CERTAIN INFECTIOUS DISEASES, BY WARDS, MARCH, 1920.

BOROUGH OF MANHATTAN.

Wards.	Area in Acres.	Population U. S. Census 1910.	Number of Persons to the Acre.	Typhoid Fever.	Smallpox.	Measles.	Scarlet Fever.	Diphtheria and Croup.	Pulmonary Tuberculosis.	Lobar Pneumonia.	Broncho-Pneumonia.	Diarrhoeal Diseases.	All Causes.	Deaths of Children Under 5 Years.
1	154.0	9,750	63.0	..	..	1	..	..	3	2	4	..	28	9
2	81.0	933	11.5	..	..	..	..	1	..	..	1	..	7	1
3	95.0	1,915	20.2	..	..	..	..	..	..	..	..	..	1	..
4	83.0	21,336	257.1	..	..	..	..	..	2	6	5	..	38	17
5	168.0	5,666	33.7	..	..	..	..	..	1	..	..	..	5	3
6	86.0	19,670	228.7	1	..	1	..	1	8	2	4	..	49	13
7	198.0	102,101	515.6	..	..	2	..	..	8	6	8	4	87	28
8	183.0	33,182	181.4	..	..	1	..	..	6	1	5	1	41	14
9	322.0	64,909	201.6	1	..	1	..	1	15	2	17	3	92	24
10	110.0	66,439	604.0	..	..	1	1	..	5	5	8	..	48	16
11	196.0	136,548	696.7	..	..	2	..	3	7	5	12	1	79	28
12	6,154.0	806,648	131.1	2	..	21	2	22	103	96	97	32	1184	317
13	107.0	64,651	604.3	..	..	1	1	..	..	5	1	3	46	21
14	96.0	38,321	399.3	..	..	..	1	4	9	7	2	3	52	22
15	198.0	30,584	154.5	..	..	1	..	..	3	3	3	..	25	5
16	349.0	55,926	160.2	..	..	1	..	..	16	8	8	2	121	30
17	331.0	172,334	520.6	..	..	5	1	8	25	15	17	6	221	78
18	450.0	62,821	139.6	..	..	7	..	5	12	6	22	3	128	39
19	1,481.0	292,950	197.7	..	..	15	..	10	32	22	40	9	409	110
20	444.0	73,308	165.1	..	..	2	..	1	9	4	10	3	101	23
21	411.0	62,345	151.7	..	..	..	1	4	6	9	11	4	98	22
22	1,529.0	209,154	136.8	..	..	3	..	2	38	24	26	10	318	65
Total.....	13,226.0	2,331,491	176.3	4	..	65	7	62	308	228	301	84	3178	885

BOROUGH OF BROOKLYN.

1	233.0	21,851	93.8	..	..	..	..	..	2	1	..	1	34	7
2	97.7	6,894	70.6	..	..	..	..	..	2	..	2	..	9	2
3	161.4	15,910	98.6	..	..	2	1	..	1	2	1	2	39	8
4	111.3	10,477	94.1	..	..	1	..	..	4	1	1	3	27	11
5	119.4	19,401	162.5	..	..	..	..	..	3	4	3	..	23	12
6	302.9	46,437	153.3	..	..	7	..	1	2	5	15	9	91	46
7	458.5	44,037	96.0	..	..	..	..	3	8	4	9	4	73	23
8	1,843.2	82,687	44.9	..	..	3	..	4	13	5	12	6	154	42
9	623.6	50,501	81.0	..	..	..	..	2	9	8	7	2	95	25
10	318.7	41,238	129.4	..	..	1	..	..	2	7	6	2	60	19
11	252.6	21,659	85.7	..	..	..	..	2	8	5	8	..	54	16
12	663.1	29,262	44.1	..	..	3	1	1	14	6	7	6	147	41
13	230.3	30,091	130.7	..	..	..	..	1	4	2	2	1	36	12
14	282.6	33,329	117.9	..	..	..	..	1	3	2	5	..	26	9
15	244.8	35,887	146.6	..	..	..	..	1	7	3	3	2	36	11
16	244.8	68,244	278.7	..	..	1	..	2	6	7	2	1	54	17
17	823.3	70,346	85.5	..	..	3	1	2	14	13	11	9	133	37
18	873.0	35,708	40.9	..	..	..	..	1	9	6	5	2	66	20
19	413.8	44,860	108.4	..	..	2	..	1	9	2	6	1	71	16
20	461.4	27,463	59.5	..	..	1	..	1	4	6	6	..	50	10
21	483.2	78,741	163.0	..	..	1	..	1	3	5	6	..	65	21
22	1,361.6	81,283	59.7	1	..	2	1	1	12	10	8	9	149	26
23	736.0	65,561	89.1	..	..	..	1	1	9	12	4	2	122	13
24	1,198.5	80,466	67.2	..	..	1	..	3	8	8	5	4	107	24
25	567.8	63,597	112.0	..	..	..	..	..	10	6	6	1	76	15
26	3,590.2	177,963	49.5	..	..	3	3	3	12	16	13	4	227	71
27	400.7	76,000	189.6	..	..	2	..	2	7	5	9	4	76	31
28	884.4	77,451	87.6	..	..	2	..	2	15	10	14	3	178	35
29	3,800.0	72,351	19.0	..	..	1	..	2	7	4	..	3	74	14
30	5,401.1	76,406	14.1	1	..	2	..	1	8	17	9	2	185	31
31	6,312.3	30,988	4.9	..	..	2	..	..	2	..	3	..	34	5
32	5,479.5	17,419	3.2	..	..	..	..	..	2	..	..	1	6	2
Total.....	38,977.8	1,634,508	41.9	2	..	40	8	39	219	182	188	84	2577	672

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BOROUGH OF THE BRONX.

Wards.	Area in Acres.	Population, U. S. Census 1910.	Number of Persons to the Acre.	Typhoid Fever.	Smallpox.	Measles.	Scarlet Fever.	Diphtheria and Croup.	Pulmonary Tuberculosis.	Lobar Pneumonia.	Broncho-Pneumonia.	Diarrhoeal Diseases.	All Causes.	Deaths of Children Under 5 Years.
23	4,267.0	268,880	63.0	..	..	10	..	13	37	19	31	5	394	89
24	22,255.8	162,062	7.3	..	..	3	..	7	20	15	31	9	341	87
Total.	26,522.8	430,942	16.2	..	..	13	..	20	57	34	62	14	735	176

BOROUGH OF QUEENS.

1	4,650.0	61,763	13.3	1	..	1	..	1	11	6	13	2	83	24
2	14,700.0	105,219	7.2	..	..	3	..	1	18	7	13	3	157	34
3	22,000.0	37,171	1.7	..	..	..	..	6	3	2	7	..	75	12
4	36,600.0	67,412	1.8	..	..	..	..	3	16	10	11	2	149	34
5	3,770.0	12,476	3.3	..	..	..	..	..	1	6	1	..	14	2
Total.	81,720.0	284,041	3.5	1		4	..	11	49	31	45	7	478	106

BOROUGH OF RICHMOND.

1	3,340.0	27,201	8.1	..	..	..	..	2	3	1	6	1	52	17
2	4,130.0	16,871	4.1	..	..	2	..	..	6	4	..	..	33	1
3	10,050.0	19,812	2.0	..	..	..	..	1	..	3	4	1	35	10
4	8,180.0	10,662	1.3	..	..	1	..	1	8	..	1	..	29	5
5	10,900.0	11,423	1.0	..	..	..	..	..	1	2	..	2	11	2
Total.	36,600.0	85,969	2.3	..	..	3	..	4	18	10	11	4	160	35

DEATHS ACCORDING TO AGE GROUPS, MARCH, 1920

Boroughs.	All Ages.	Under 1 Year.	1 Year and under 2.	Under 5 Years.	5-15 Years.	15-25 Years.	25-45 Years.	45-65 Years.	65 Years and over.	Colored.	Chinese.
Manhattan.	3,178	567	194	885	109	159	579	861	585	214	8
The Bronx..	735	108	31	176	40	32	139	172	176	17	..
Brooklyn...	2,577	405	134	672	94	158	449	634	570	83	3
Queens.....	478	69	16	106	14	29	83	121	125	6	..
Richmond..	160	25	4	35	6	11	27	26	55	3	..
City of N.Y.	7,128	1,174	379	1874	263	389	1,277	1,814	1,511	323	11

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INFECTIOUS DISEASES.

Number of Cases Reported in the City of New York, by Boroughs, During March, 1920, and March, 1919.

	Manhattan.		The Bronx.		Brooklyn.		Queens.		Richmond.		City.	
	MARCH		MARCH		MARCH		MARCH		MARCH		MARCH	
	1920	1919	1920	1919	1920	1919	1920	1919	1920	1919	1920	1919
Typhoid Fever	20	11	1	....	3	5	1	1	...	...	25	17
Typhus Fever	1	1	....	....	....	....	...	...	...	...	1	1
Malaria	1	2	2	....	....	....	...	...	...	...	3	2
Small Pox	2	2	....	....	....	....	...	1	...	...	2	3
Measles	2,522	158	948	17	2,660	75	584	7	99	7	6,813	264
Scarlet Fever	253	252	100	107	223	235	69	57	17	25	662	676
Whooping Cough	460	15	142	3	325	17	131	...	14	1	1,072	36
Diphtheria and Croup	642	688	175	290	439	527	83	77	25	27	1,364	1,609
Leprosy	....	....	....	....	....	....	...	...	...	...	....	....
Mumps	278	133	8	26	147	130	22	28	3	17	458	334
German Measles	61	26	55	8	62	22	3	...	1	3	182	59
Chicken Pox	250	237	124	66	121	220	18	49	23	27	536	599
Glanders	....	....	....	....	....	....	...	...	...	...	....	....
Anthrax	2	1	....	....	2	....	...	...	...	...	4	1
Rabies	....	....	....	....	....	....	...	...	...	...	....	....
Tetanus	1	....	....	....	1	....	...	...	...	...	2	....
Pellagra	....	....	....	....	....	....	...	...	...	...	....	....
Pulmonary Tuberculosis	816	718	159	130	441	615	133	18	17	19	1,566	1,500
Other Tuberculous Diseases	....	....	....	....	....	....	...	...	...	...	....	....
Syphilis	999	875	74	104	314	380	16	20	11	6	1,414	1,385
Gonorrhoea	290	219	42	27	112	154	12	12	...	1	456	413
Cerebro-Spinal Meningitis	8	14	1	2	5	13	...	1	...	1	14	31
Poliomyelitis	2	1	1	....	1	....	...	...	...	...	4	1
Hookworm	....	....	....	....	....	....	...	...	...	...	....	....
Trichinosis	....	....	....	....	....	....	...	...	...	...	....	....
Influenza	1,028	2,236	159	435	327	884	48	144	5	98	1,567	3,797
Pneumonias	726	927	234	213	791	459	109	70	49	49	1,909	1,718
Total	8,362	6.516	2,225	1,428	5,974	3,736	1,229	485	264	281	18,054	12,446

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MONTHLY METEOROLOGICAL SUMMARY.

MARCH, 1920

Date.	Temperature. (Degrees Fahrenheit.) Maximum.	Minimum.	Mean.	Departure of Mean from Normal.	Relative Humidity. (Per Cent.) 8 a.m.	Precipitation (Inches.) Rain.	Snow.	Wind. (Miles per hour.) Average Velocity.	Prevailing Direction.	Maximum Velocity and Direction.	Sunshine. Number of Hours.
M 1	38	15	26	— 7	48	0	0	24.9	NW	37 NW	11.3
T 2	34	24	29	— 5	57	0	0	11.6	SE	29 NW	11.0
W 3	44	28	36	+ 2	75	0	0	11.0	SE	21 SE	11.4
T 4	45	32	38	+ 4	90	0	0	20.8	E	37 E	3.4
F 5	48	22	35	+ 1	96	2.00	0.9	42.1	E	55 E	0
S 6	22	14	18	—16	82	.20	2.1	55.5	NW	78 NW	9.0
S 7	26	12	19	—16	45	0	0	24.8	NW	41 NW	10.6
M 8	30	14	22	—13	55	0	0	20.2	SW	31 SW	11.6
T 9	40	24	32	— 3	62	0	0	21.1	SW	28 SW	10.9
W 10	53	33	43	+ 7	63	0	0	19.0	W	31 W	11.0
T 11	58	39	48	+12	66	T	0	6.2	SW	24 S	2.3
F 12	57	48	52	+16	60	.08	0	25.9	SW	58 S	1.0
S 13	53	23	38	+ 2	97	.87	1.2	27.4	NW	62 NW	0
S 14	34	20	27	—10	48	0	0	37.8	W-NW	62 NW	11.9
M 15	48	25	36	— 1	37	0	0	16.2	S-NW	30 NW	11.6
T 16	55	38	46	+ 8	76	.22	0	26.6	SW	46 SW	0.8
W 17	53	37	45	+ 7	6	0	0	39.8	NW	62 NW	5.1
T 18	42	31	36	— 2	47	0	0	32.8	NW	57 NW	11.2
F 19	34	28	31	— 7	50	.42	1.3	15.5	E	27 SE	1.2
S 20	40	31	36	— 3	96	.16	0.2	20.4	NW	38 NW	0
S 21	50	33	42	+ 3	61	0	0	17.2	NW	27 NW	12.2
M 22	58	36	47	+ 8	60	0	0	13.5	W	22 W	12.2
T 23	65	44	54	+14	57	0	0	15.1	SW	28 W	12.3
W 24	60	44	52	+12	66	0	0	9.0	SE	17 SW	11.1
T 25	68	42	55	+15	55	0	0	10.3	N	18 NE	12.4
F 26	56	47	52	+12	84	.01	0	12.3	S	25 SE	1.6
S 27	58	42	50	+ 9	61	T	0	29.8	W-NW	52 NW	7.2
S 28	67	37	52	+11	55	0	0	16.1	S	44 NW	12.5
M 29	59	41	50	+ 8	96	.20	0	24.8	SE	60 NW	0
T 30	58	40	49	+ 7	50	T	0	29.6	W	44 NW	12.6
W 31	69	48	58	+16	54	0	0	22.7	SW	38 W	12.6
Month	Mean 49.1	Mean 32.0	Mean 40.6	Blank	M'n 64	Total 4.16	Total 5.7	Mean 22.6	Prev'l'g NW	Blank	Total 242.0
Normal	45.2	30.7	37.5	Blank	73	4.10	7.6	12.7	NW	Blank	Possible 370.8

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CONTENTS: SUPERVISION OF INSTITUTIONS BY THE DEPARTMENT OF HEALTH.
RE-VOCATIONAL CENTERS.

BOSTON MEDICAL
AUG 9 1920
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MONTHLY BULLETIN
OF THE
DEPARTMENT of HEALTH
CITY OF NEW YORK

Public health is purchasable. Within natural limitations a community can determine its own death rate.

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ROYAL S. COPELAND, M. D., Commissioner of Health.

VOL X. MAY, 1920. No. 5.

SUPERVISION OF INSTITUTIONS BY THE HEALTH DEPARTMENT OF NEW YORK CITY.*

By FRANK J. MONAGHAN, M.D.,

Deputy Commissioner.

This is the day of institutions, institutions of all kinds and character. To-day, through the instrumentality of kindly philanthropists, or through the wisdom of those who guide us in the affairs of the state or city, the institutions of which we, in the Department of Health, must take particular notice, have come strongly to the front. This is to be seen in the fact that while in 1916 there were 667 institutions in which the Department of Health was interested, in 1919 we have 1,045, of which 995 are within the city and 50 outside. This remarkable increase shows the tendency of the times. This increase is due, in my opinion, to the fact that ideas and knowledge of hygiene and sanitation are becoming more widespread. It is, in fact, a part of what has been aptly called the modern health crusade.

The Attitude of the Public.

The day when an institution was looked upon as a thing of horror, to be avoided, has passed away; and to-day with the constant reiteration of matters of hygiene and sanitation, with the education of the people themselves along these lines, we find that these institutions are no longer considered places of last resort only, but that now they are even sought after by those who only a few years ago would have rejected them with fear and trembling. To-day it is not the poor alone who seek the care of institutions, but those who have ample means, whose home surrounding are probably the best, are recognizing the changed condition. These also avail themselves of the opportunities held out to them. Also the new ideas in medicine, the so-called "group system" which is the latest advance, undoubtedly will result in a larger number of

* Read before the New York State Conference of Charities and Corrections, Syracuse, N. Y. November 13, 1919. First printed in "Modern Medicine," January, 1920.

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institutions of this character coming under the direction of the Department of Health of the City of New York.

This somewhat changed condition and the growing number of institutions, make it incumbent upon the Department of Health of the City of New York to maintain a strict and farseeing supervision of these institutions. This is a particular and well recognized function of this Department and, in the words of one of our contemporaneous writers, "this is one of the things that we do well."

For the purposes of supervising institutions, the Department of Health of the City of New York has instituted the Division of Institutional Inspection. Prior to the time this Division was organized, matters connected with institutions were supervised by three different divisions, which made for confusion, needless duplication, and lack of initiative. To-day this Division, composed of a chief and twenty-one inspectors, is directly connected with the office of, and reports to, the Deputy Commissioner of Health.

Two Groups of Inspectors.

These inspectors are divided into two groups, twelve inspectors doing work in all institutions, and nine making physical examinations of children in institutions subsidized by the City,—that is, institutions receiving pay for the board and care of children. The City is divided into approximately uniform districts and the first group of inspectors are subject to call daily from 9 a. m. to 5 p. m. in their own districts, and each in turn covers the diagnosis work of the whole borough to which he is assigned between 5 p. m. and 9 a. m.

Group 2, except when called upon to do emergency work, does all its work in institutions subsidized by the City. Inspectors make physical examinations in institutions assigned to them and make routine sanitary inspections of these institutions. Two inspectors are assigned to out-of-town work, and do exactly the same work as those in Group 2.

The Division now has under its supervision the following:

	In town.	Out of town.
Hospitals	133	..
Dispensaries	111	..
Diagnostic laboratories	169	..
Private sanitariums	71	..
Homes for adults	174	..
Homes for children	127	49
Day nurseries	115	..
Homes for the aged	52	..
Homes for incurables	17	..
Reformatories and prisons	25	1
Miscellaneous	1	..
	995	50

The functions of this division include: (1) diagnosis in institutions; (2) sanitary inspections in institutions; (3) special examinations, administration of sera, etc.; and (4) physical examinations in institutions.

Functions of the Inspection.

The first and foremost function, diagnosis in institutions, which is ever immediately urgent in character, is performed in all of the institutions except those outside of New York City. The necessity of accurate and rapid diagnosis, the securing of

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proper isolation and quarantine, the removal of certain cases to appropriate City hospitals, the proper discharge from quarantine of cases of communicable diseases, and the investigation of cases of abortion and puerperal sepsis, is recognized by everyone.

Sanitary Surveys Important.

The second function, which is an important one and which is also performed regularly in all of these institutions within as well as without the City limits, is that of sanitary inspection. The following guide devised by the Chief of the Division of Institutional Inspection is followed by the medical inspectors in conducting their sanitary investigations. It will be seen that sanitary surveys made under this guide are most comprehensive and elaborate, and that it has been of the utmost value as a matter of record.

Name of Institution.....

Address of Institution.....

Character .....

Grounds.—A short description of the grounds as regards extent and character of the surface (grass, dirt, cement), its drainage; general cleanliness.

Buildings.—Location as to grounds; character of construction of the building or buildings; and general condition from outside appearances.

Fire Prevention.—Fire escape, chemical fire extinguishers; fire pails (whether containing sand or water); fire alarm system; water hydrants outside of buildings to be used for fire hose connection; fire drills.

Plumbing.—Nature and adequacy of the plumbing,—it must be open; the number of baths, both tub and shower, as compared with the number of inmates who are designated to use them; the number of toilets, with their location, and the proportion of toilets to the number of inmates who are required to use them. Washrooms, bathrooms, and toilet rooms must have impervious floors, with no leaks.

Ventilation.—Nature and adequacy; natural or artificial.

Heat.—Character and sufficiency of (a) steam; (b) hot air; (c) hot water; (d) gas stoves; and (e) coal stoves.

Light.—Nature and adequacy; natural or artificial; (a) gas; (b) electricity; (c) lamps; or (d) candles.

Adequacy of Equipment.

Dormitories.—Location and general description, giving the number of cubic feet of air space in each, the number of beds, and whether two feet apart or not. Six hundred cubic feet of air space to be allowed for each bed, as required by Section 313 of the Public Health Law. If a less number of cubic feet of air space is allowed, the reason for such must be given, as for example, exceptional ventilation.

Beds.—Character of the beds—whether metal or wood, whether single or otherwise, and whether more than one occupant. Springs, whether ordinary or woven. Mattresses, whether hair, felt, or straw; whether protected by rubber sheeting.

Bed Clothing.—Character and frequency of change; adequacy and seasonability; nature of night clothing of inmates.

Sitting Rooms.—Furnishings and conveniences.

Dining Rooms.—Proper light and ventilation; cleanliness. Are the rooms screened? Character of the seats. Have the chairs or benches backs upon them? The character of the dishes,—whether crockery, enameled iron, etc. Have the tables table-cloths? If so, how often are they changed? Are individual napkins used?

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If so, how often are they changed? Are the dishes and eating utensils clean? Are individual drinking cups or glasses provided? Are food handlers provided with food handler's certificates?

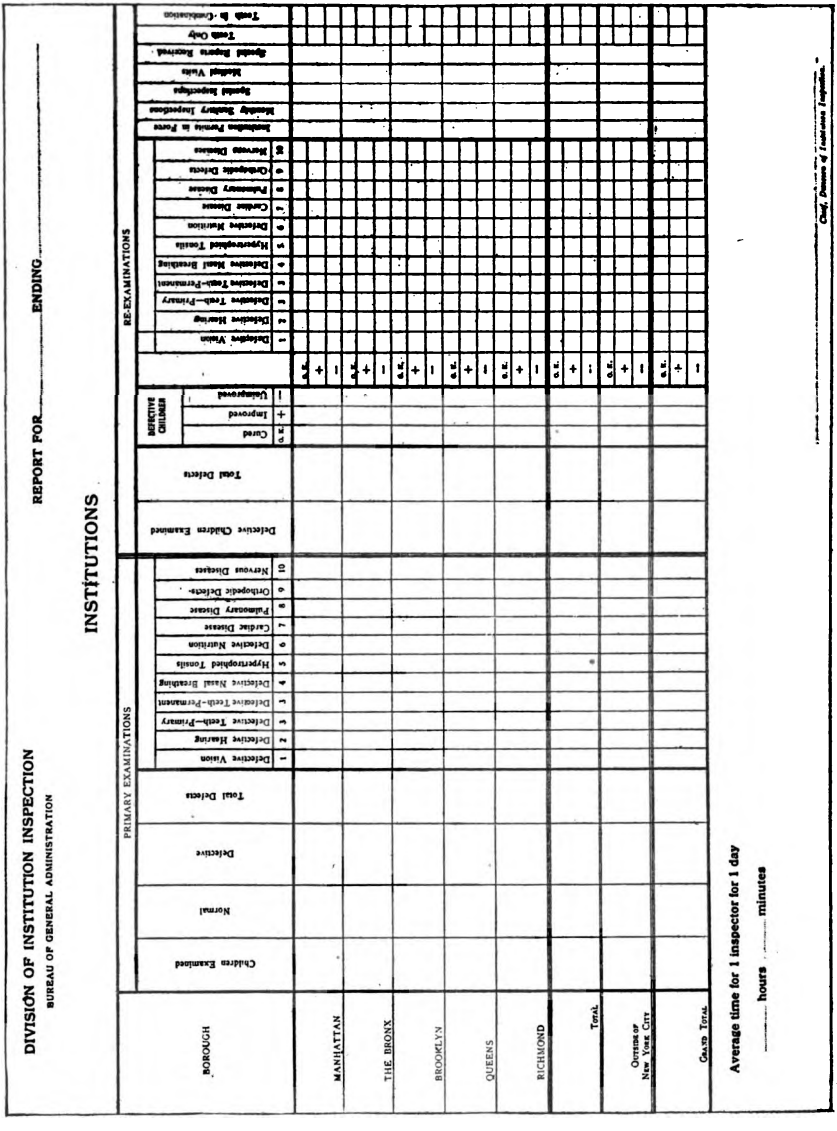
DIVISION OF INSTITUTION INSPECTION
BUREAU OF GENERAL ADMINISTRATION
INSTITUTIONS
REPORT FOR _____ ENDING _____
PRIMARY EXAMINATIONS
RE-EXAMINATIONS
BOROUGH
Children Examined
Normal
Defective
Total Defects
Defective Vision
Defective Hearing
Defective Teeth—Primary
Defective Teeth—Permanent
Defective Nasal Breathing
Hypertrophied Tonsils
Defective Nutrition
Cardiac Disease
Pulmonary Disease
Orthopedic Defects
Nervous Diseases
Detective Children Examined
Total Defects
Cured
Improved
Unimproved
DEFECTIVE CHILDREN
Defective Vision
Defective Hearing
Defective Teeth—Primary
Defective Teeth—Permanent
Defective Nasal Breathing
Defective Nasal Breathing
Hypertrophied Tonsils
Defective Nutrition
Cardiac Disease
Pulmonary Disease
Orthopedic Defects
Nervous Diseases
Tuberculosis Found in Foyer
Monthly Sanitary Inspections
Special Inspections
Medical Visits
Special Reports Received
Tests Only
Tests In Classroom
MANHATTAN
THE BRONX
BROOKLYN
QUEENS
RICHMOND
Total
Outside of New York City
Grand Total
Average time for 1 inspector for 1 day
_____ hours _____ minutes
Chief, Bureau of Institution Inspection

Fig. 1. Chart used for analyzing physical examinations. The original is 13½ by 14½ inches and has space for reports of the primary examinations and also for re-examinations.

The Kitchen Equipment.

Kitchen.—Is it fully and properly equipped? Are tables zinc covered? Are they in good repair? Are the utensils clean? if copper or brass, are they thoroughly clean and free from verdigris? Is a common roller towel in use? Is the room properly screened in warm weather? Are fresh vegetables used when procurable? What is the general character of the food as to its quality?

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The Handling of Supplies.

Refrigeration.—Is the refrigerating plant of proper size? What is the character of the refrigeration? Are separate compartments provided in refrigerators for (1) milk, butter, and eggs; (2) meats; and (3) fresh vegetables? What grade, or grades of milk are used? Is the milk for drinking Grade A or B? Is Grade C milk used for cooking?

Garbage.—How is the garbage disposed of? Are garbage cans properly covered? Is an effort made to prevent the breeding of flies in and about the kitchen and grounds?

Storeroom.—General description.

Drinking water.—Nature of; how furnished, by drinking fountains or taps with cups? Are individual cups or glasses furnished? Is the water wholesome?

Classrooms.—Kind of light, heat, and ventilation. The relationship of the light to the desks and to the blackboards; general cleanliness of the rooms.

Playrooms.—Conditions as to light, heat, ventilation, cleanliness, water supply, and toilet and washing facilities.

Children.—Their clothing. Is the clothing seasonable and of proper amount? The cleanliness of their bodies.

Bathing.—How often bathed and how? Shower or tubs? Is more than one child bathed in the same tub of water without water being changed? Are individual towels, wash rags, tooth brushes, tooth powder, combs, soap, and sponges provided? What method is used to preserve their individuality? Are fine combs disinfected after use? Are the boys allowed to use hair brushes? Is liquid soap used? Is any effort made to teach oral hygiene?

Matters of General Sanitation.

General.—Is the institution supplied with a permit? This is necessary where the inmates are sixteen years or under. Are dormitory placards posted in each and every dormitory, and is the permit exceeded.

Inmates.—Between what ages?

Census.—Male and female.

Attending physicians.—Does the name of the attending physician appear in a conspicuous place in the hall?

Cleaning and sweeping.—How often is this done? No dry sweeping is permitted.

Hospital facilities.—Hospital,—how many beds? Infirmary,—how many beds? Quarantine room or rooms,—how many beds? Isolation room or rooms,—how many beds? Physicians and other attendants,—how often do they visit the institution? Nurses, hospital equipment, and drugs: Is the medicine closet kept locked when not in use? Are records kept of everything done in the hospital and dispensary? What is the nature of the records kept?

Sample menus.

Sewage.—Does it empty into the river? Is the sewer connected with cesspool or disposal system? Condition of roof and rain leaders? Is there a stable on the premises? Possible sources of nuisance in the vicinity,—smoke, offensive trades, stagnant or undrained areas?

Laundry.—How is machinery run? Equipment. Engine room. Boilers,—high or low pressure.

Staff.—Educational; help.

Recreation.—Where and how much?

Sleep.—Hours of going to bed and arising?

Recommendations.

Statement of authorities.

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A third function is also performed in all institutions, no matter what the type: namely, the administration of sera, and vaccines; the application of the Schick test; the collection of cultures, smears, and blood for laboratory examination; the medical examination of food handlers in institutions and the performance of field work for the Divisions of Epidemiology, Venereal Diseases, Tuberculosis, Industrial Hygiene,

WEEKLY REPORT

DIVISION OF INSTITUTION INSPECTION
BUREAU OF GENERAL ADMINISTRATION

For Week ending.....19

	MANHATTAN		BRONX		BROOKLYN		QUEENS		RICHMOND		GREATER NEW YORK	
	New	Pending	New	Pending	New	Pending	New	Pending	New	Pending	New	Pending
Diphtheria												
Measles												
Scarlet Fever												
Chickenpox												
German Measles												
Mumps												
Whooping Cough												
Tuberculosis												
Typhoid Fever												
Cerebro-spinal Meningitis												
Acute Poliomyelitis												
Venereal Diseases												
Small-pox												
Non-contagious												
TOTAL												
No. Inspectors on Duty												
Average daily time on duty												
Visits by Inspectors												
Cases removed to Department Hospitals from Institutions												
Examinations at Tombs Prison												

.....M. D.
Chief of Division.

Fig. 2. Form for weekly report of the Division of Institutional Inspection to the Bureau of General Administration. This report covers all of the most common contagious diseases.

Midwives and Foundlings in so far as their work affects institutions; and, finally, special investigations under the direction of the chief diagnostician.

A fourth function of the Health Department is performed in all subsidized institutions and in non-subsidized homes for children: namely, in January, February, March

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and April, and again in July, August, September, and October the complete physical examination of the inmates is made, under ten headings: (1) vision; (2) hearing; (3) defective teeth,—whether primary or permanent; (4) nasal breathing; (5) enlarged tonsils; (6) defective nutrition; (7) cardiac disease; (8) pulmonary disease; (9) orthopedic defects, and (10) nervous diseases.

Re-examinations of those found with defects in order to determine whether or not defective conditions have been remedied are performed each year in May and June, and again in November and December.

We may now consider the detailed supervision exercised in the various types of institutions:

The Supervision of Hospitals.

The extent of hospital supervision by the local Department of Health depends upon the organization of the institution. Hospitals organized under the membership

Borough .....Institution.....Address.....
Name .....Age.....Date of Admission.....

	1 Exam.	Re-exam.	2 Exam.	Re-exam.	3 Exam.	Re-exam.	4 Exam.	Re-exam.
Date								
Inspector								
1. Vision OD								
OS								
2. Hearing								
3. Defective Teeth—Primary								
Defective Teeth—Permanent								
4. Defective Nasal Breathing								
5. Hypertrophied Tonsils								
6. Degree of Defective Nutrition { 2 3 4								
7. Cardiac Disease { Functional Organic								
8. Pulmonary								
9. Orthopaedic Defect								
10. Nervous Disease								
Skin Disease								
Scalp Disease								
Diseases of Glands								
Previous Operations								
Incurable Disease								
Remarks								

DEPARTMENT OF HEALTH—CITY OF NEW YORK. BUREAU OF GENERAL ADM. DIVISION OF INSTITUTIONAL INSPECTION

25 1497-16-B, Form 278

Fig. 3. Blank used in reporting physical examinations and numerous re-examinations. The reverse side, Figure 6, gives the average height in inches and weight in pounds of boys and girls.

corporation laws, being philanthropic in purpose, are under the direct jurisdiction of the State Board of Charities so far as their organized maintenance and conduct are concerned. We do, however, perform regular sanitary inspections and, on call, representatives of the Health Department respond for purposes of diagnosis of communicable diseases; for the enforcement of isolation and quarantine; the removal of appropriate contagious and infectious cases to special hospitals, and for the proper discharge of all patients with communicable diseases.

Hospitals organized under the business corporation laws, so-called private hospitals, are entirely under the jurisdiction of the Health Department and the complete procedure in these cases is as follows:

First, approval of site must be obtained from the Board of Health. In making application the following points are considered by the Board: (1) the necessity for the hospital in the particular locality under consideration; (2) the character of the work to be performed. If maternity cases are accepted, this must be specially men-

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tioned; (3) the financial responsibility of the owners and their capabilities for efficient management; (4) the names and addresses of those who will perform work at the institution; and (5) it is desirable also to detail the fact that there will be no objections on the part of neighboring property owners and residents.

If the Board of Health gives its approval of site, the next step in procedure is to obtain from the Bureau of Buildings, a certificate of occupancy for hospital purposes. Next, we must be in possession of a certificate from the Bureau of Fire Prevention of the Fire Department stating that there are no violations, so far as this city depart-

Date	Age	Height	Weight	Remarks

AVERAGE HEIGHT AND WEIGHT

	(Height—Inches)		(Weight—Pounds)	
	Boys	Girls	Boys	Girls
2	32.5	32.5	26 5	26 5
3	35 0	35 0	31.2	30.0
4	38 0	38 0	35 0	34.0
5	41.7	41.4	41.2	39 8
6	44.1	43 6	45 1	43 8
7	46.2	45 9	49 5	48.0
8	48.2	48 0	54.5	52.9
9	50.1	49 6	60.0	57.5
10	52.2	51 8	66.6	64.1
11	54 0	53 8	72.4	70.3
12	55.8	57.1	79.8	81.4
13	58.2	58.7	88.3	91.2
14	61.0	60 3	99 3	100.3
15	63.0	61.4	110 8	108.4
16	65.6	61.7	128 7	113.0

REMARKS

Fig. 4. Reverse side of the blank used in reporting physical examinations, with tabulations of average height and weight and space for making records. The front of the card is illustrated in Figure 5

ment is concerned, pending against the premises. In the interim, an application filled out on an official blank must be presented.

The supervision of private sanatoriums involves the same procedure as with hospitals organized under the business corporation laws.

Finally, when these requirements have been satisfactorily met, a complete sanitary survey of the premises is made by a duly accredited representative of the Division of Institutional Inspection and, if his report is favorable, a recommendation is made that a permit be granted.

With this type of hospital, the routine work is the same as with the first mentioned

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class, namely, the regular sanitary inspection of the building or buildings, and the diagnosis, sanitary control, and proper discharge of all communicable disease cases. The sanitary inspections the same as in other hospitals. Diagnosis is made and removal ordered to appropriate hospitals of cases of communicable disease.

Every laboratory in New York City offering facilities for the diagnosis of communicable diseases must be in possession of a permit issued therefor by the Board of Health. On the receipt of an official application for such a permit, a medical inspector is detailed to examine: (1) The equipment, minimum requirements for which have been determined upon, to see that the laboratory is possessed of facilities to make diagnosis of disease and conditions specified in the application, and for (2) regular and systematic sanitary investigations. Where these homes receive city money, the inmates are regularly given physical examinations and those with physical defects

DAILY REPORT 191 OF M. D., MEDICAL INSPECTOR

DISTRICT BOROUGH

DISEASE	NAME	NAME OF INSTITUTION AND ADDRESS	HOUR VISITED	LOCATION OF QUARANTINE. NATURE OF INSPECTIONS. REMARKS

DEPARTMENT OF HEALTH, THE CITY OF NEW YORK, DIVISION OF INSTITUTION INSPECTION 25-1282-13-B. FORM 93 A-1916

Fig. 5. The inspector's daily report card gives the name and location of the institution, names of patients, the time of his visit, and the nature of his inspection. The reverse side is illustrated in Figure 8.

re-examined. Sanitary surveys are also performed. If they receive no city support, no physical examinations are ordinarily conducted.

Perhaps nowhere in the world are homes for children, the so-called child caring institutions, so carefully and conscientiously supervised as they are in New York City. The safeguards placed about children in these homes by the Health Department are most comprehensive, and it devolves upon the Division of Institutional Inspection not only to carry out the policy of the various city departments, particularly that of the Department of Health, but from time to time to inaugurate progressive measures, looking to the further betterment of the lives of the inmates. Constructive criticism is indulged in by duly auhorized medical inspectors on the occasion of their many visits for the purpose of performing their routine duties.

The Sanitary Code reads as follows: "Board and care of children regulated. No person other than a superintendent of the poor, or superintendent of almshouses, or an institution duly incorporated for the purpose, shall receive, board, or keep, except under legal commitment, any nursing child, or any child under the age of twelve years

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who is not a relative, pupil, or ward, or an apprentice of such person, without a permit therefor issued by the Board of Health or otherwise than in accordance with the terms of said permit and with the regulations of said Board (S. C. 197)."

Institutions of this character incorporated for the purpose or maintained for the care of children under legal commitment, need no permit from the Health Department except where less than 600 cubic feet of air space per child is allowed. Under these circumstances, the State Board of Charities authorizes the local Board of Health, in view of unusual ventilation, to issue permits for dormitories in which there are less than 600 cubic feet of air space per child. Section 482, Penal Law, State of New York, provides that a person who (1) wilfully omits without lawful excuse to perform a duty by law imposed upon him to furnish food, clothing, shelter, or medical attendance to a minor, or to make such payment toward its maintenance as may have been required by the order of a court or magistrate when such minor has been com-

DISEASE	NAME	NAME OF INSTITUTION AND ADDRESS	HOUR VISITED	LOCATION OF QUARANTINE, NATURE OF INSPECTIONS, REMARKS

THIS IS TO CERTIFY THAT I HAVE PERFORMED THE WORK DESCRIBED ON THIS REPORT, ON THIS DATE, AND AT THE TIME INDICATED

TOTAL TIME ON DUTY

INSPECTOR

ASSIGNMENTS				WORK PERFORMED									VISITS TO CASES									
For Diagnosis	For Removal to Hospital	Complaints, etc.	Re-Visits	Diphtheria Immunizations	Diphtheria Cultures	Schick Tests	Typhoid Immunizations	Blood for Widal Tests	Vaccinations	Sanitary Inspections	Medical Examinations	Institutions Visited	Diphtheria	Scarlet Fever	Measles	Typhoid Fever	Tuberculosis	Cerebro-Spinal Meningitis	Poliomyelitis	Venereal Diseases	Miscellaneous	Total Visits

Fig. 6. Reverse side of the inspector's daily report card shown in Figure 7. This card bears certificate of the inspector as well as the assignments made, the kind of work performed, and the type of cases visited.

mitted to an institution; or (2) not being a superintendent of the poor, or a superintendent of almshouses, or an institution duly incorporated for the purpose, without having first obtained a license in writing so to do from the board of health of the city or town wherein such females or children are received, boarded, or kept, erects, conducts, establishes, or maintains any maternity hospital, lying-in asylum where females may be received, cared for, or treated during pregnancy, or during or after delivery; or receives, boards, or keeps any nursing children, or any children under the age of twelve years not his relatives, apprentices, pupils, or wards without legal commitment, is guilty of a misdemeanor.

Prior to the issuance of such permit, we insist upon the possession of a certificate of occupancy from the Bureau of Buildings and a certificate from the Bureau of Fire Prevention of the Fire Department to the effect that there are no violations, in so far as this latter Department is concerned, pending against the premises and that the building or buildings are suitable and safe for the purposes to which it or they are to be put.

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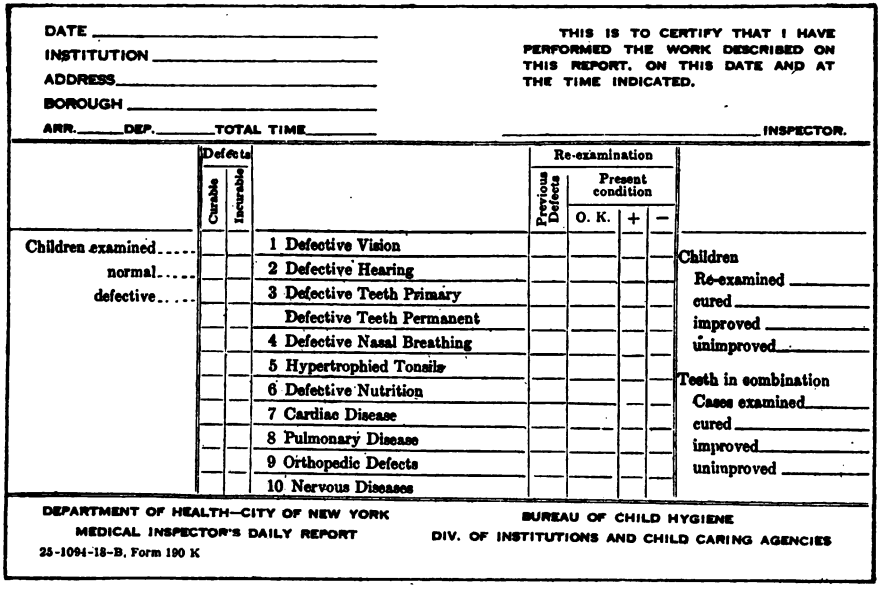
Applications for these permits are made on official blanks furnihsed gratuitously by the Department.

Day Nurseries.

The Sanitary Code defines a day nursery as a place where more than three children are received, kept, and cared for during the day time. We have under our jurisdiction at the present time, 115 day nurseries.

In order to conduct a day nursery, it is required that a certificate of occupancy be obtained from the Bureau of Buildings and a certificate be obtained from the Bureau of Fire Prevention stating that there are no violations pending against the premises.

An application must be completed and signed by the persons proposing to conduct a day nursery and a sanitary inspection must be made by one of the inspectors of



DATE _____

INSTITUTION _____

ADDRESS _____

BOROUGH _____

ARR. _____ DEP. _____ TOTAL TIME _____

THIS IS TO CERTIFY THAT I HAVE PERFORMED THE WORK DESCRIBED ON THIS REPORT, ON THIS DATE AND AT THE TIME INDICATED.

_____ INSPECTOR.

	Defects: Curable	Defects: Incurable		Re-examination: Previous Defects	Re-examination: Present condition O. K.	Re-examination: Present condition +	Re-examination: Present condition −	
Children examined.....			1 Defective Vision					Children
normal.....			2 Defective Hearing					Re-examined _____
defective.....			3 Defective Teeth Primary					cured _____
			Defective Teeth Permanent					improved _____
			4 Defective Nasal Breathing					unimproved _____
			5 Hypertrophied Tonsils					
			6 Defective Nutrition					Teeth in combination
			7 Cardiac Disease					Cases examined _____
			8 Pulmonary Disease					cured _____
			9 Orthopedic Defects					improved _____
			10 Nervous Diseases					unimproved _____

DEPARTMENT OF HEALTH—CITY OF NEW YORK
MEDICAL INSPECTOR'S DAILY REPORT
25-1094-18-B, Form 190 K

BUREAU OF CHILD HYGIENE
DIV. OF INSTITUTIONS AND CHILD CARING AGENCIES

Fig. 7. The medical inspector makes a daily report of re-examinations on the above card.

the Division of Institutional Inspection. This report includes the measurement of the rooms. The Sanitary Code provides for a minimum of 200 cubic feet of air space for each child. Theese reports being favorable, the papers governing the case are forwarded to the Board of Health with a recommendation that a permit be granted. The permit states the maximum number of children allowed.

Monthly Inspections at Nurseries.

A routine sanitary inspection is made of all the day nurseries at least once a month. Inspectors at this time report on the sanitary conditions found and also on the conduct of the nursery by the day nursery's own physician and the matron of the institution. The records of the day nursery must show that child was inspected on admission and thereafter twice a month by the physician attached to the nursery, the examinations to be at least two weeks apart.

In case any contagious disease is found the child must be put into the isolation room, as is required, and the Department of Health must be notified at once.

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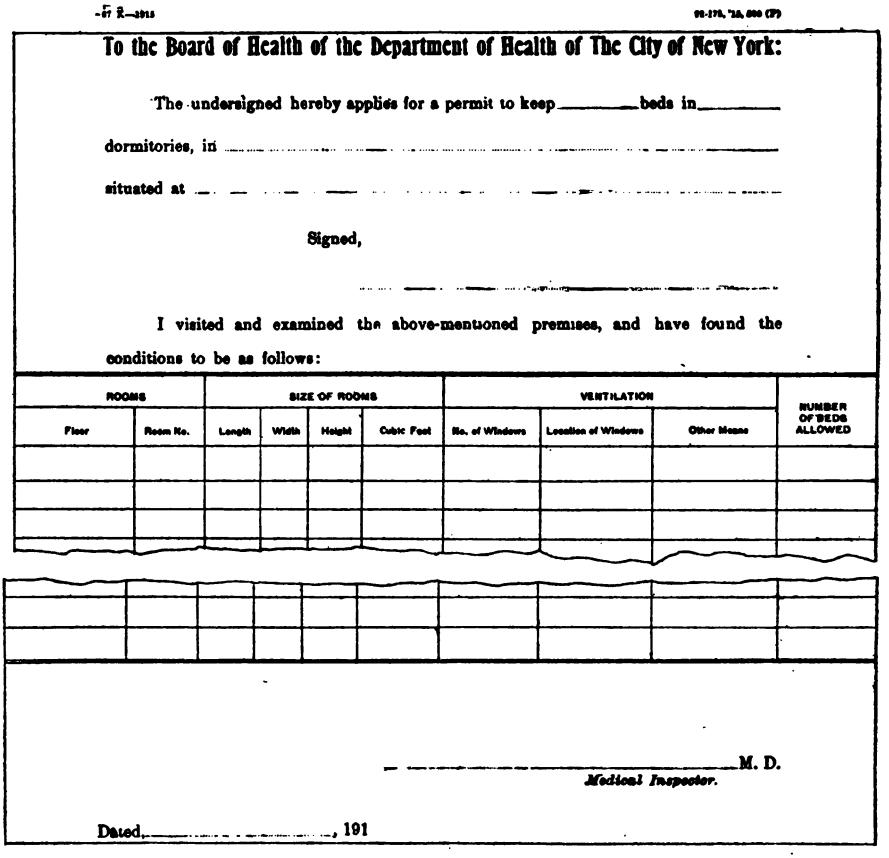
Standards of Nursery Hygiene.

Rooms of all day nurseries must be above the street level unless there is a cellar underneath the room so occupied. Provisions are made regulating the cleanliness, ventilation, light, heat, and care of food, including care of bottles and nipples used, outer garments, and arrangement of the beds or cribs so that there shall be a space of two feet, except where the head or sides of the crib may touch the wall; the use of wire springs, the use of blankets over the springs instead of mattresses for the sake of cleanliness. The use of common wash cloths, towels, combs, or brushes



To the Board of Health of the Department of Health of The City of New York:

The undersigned hereby applies for a permit to keep _____ beds in _____

dormitories, in _____

situated at _____

Signed,

_____

I visited and examined the above-mentioned premises, and have found the conditions to be as follows:

ROOMS		SIZE OF ROOMS				VENTILATION			NUMBER OF BEDS ALLOWED
Floor	Room No.	Length	Width	Height	Cubic Feet	No. of Windows	Location of Windows	Other Means	

_____ M. D.
Medical Inspector.

Dated _____, 191

Fig 8. Form which must be filled out before permission will be granted to open a child-caring institution. The medical inspector's report of conditions in the premises described must also be included.

is prohibited. Special attention is paid to the care of diapers, and the nursery is required under certain conditions to provide over-aprons.

The matron is required to inquire daily of the mother or other person bringing the child as to whether or not any sickness exists in the child's home and if any suspicion is aroused as to the possibility of such sickness being of an infectious nature, the child is excluded from the day nursery, the Health Department notified and the exclusion continues until a certificate of the Department of Health is furnished to the nursery to the effect that the premises referred to are free from infectious disease.

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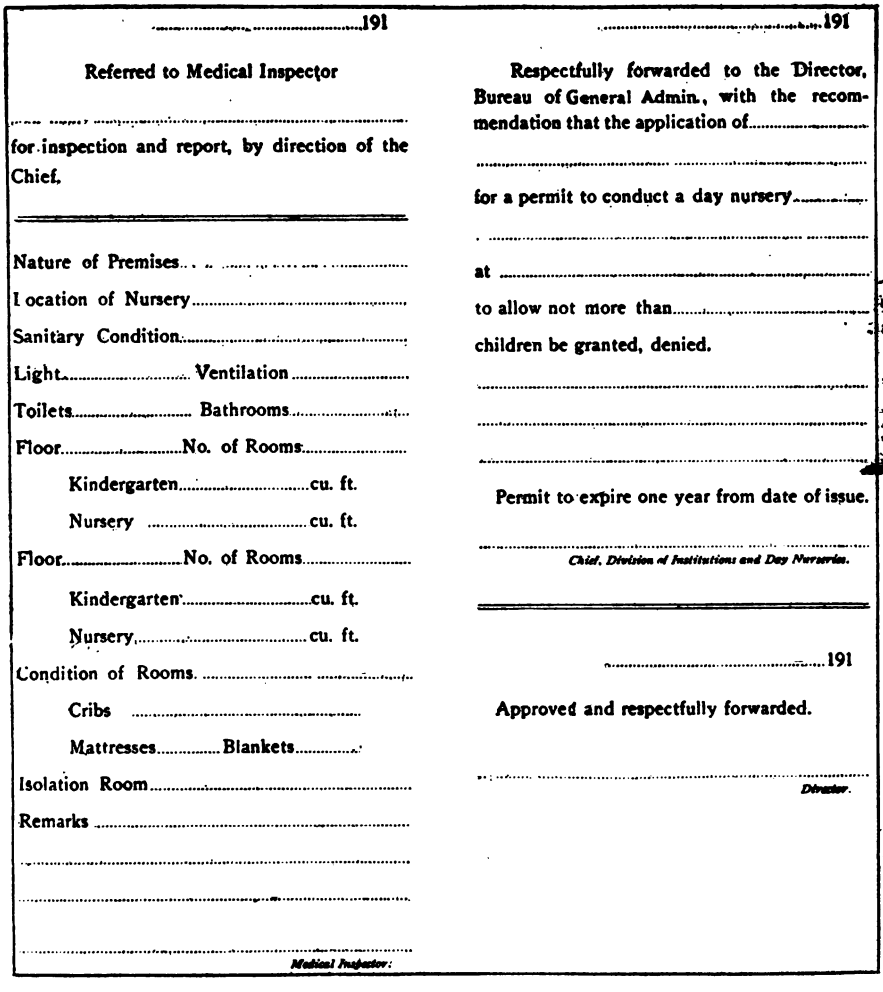
Homes for the Aged.

Thre are fifty-two homes for the aged under supervision. The procedure is the same as in the case of homes for adults.

We have under us seventeen homes for incurables. The procedure followed is for the most part the same as in other homes for children, as the majority of these



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Referred to Medical Inspector

.....

for inspection and report, by direction of the Chief.

Nature of Premises.....

Location of Nursery.....

Sanitary Condition.....

Light..... Ventilation.....

Toilets..... Bathrooms.....

Floor..... No. of Rooms.....

Kindergarten..... cu. ft.

Nursery ..... cu. ft.

Floor..... No. of Rooms.....

Kindergarten..... cu. ft.

Nursery..... cu. ft.

Condition of Rooms.....

Cribs .....

Mattresses..... Blankets.....

Isolation Room.....

Remarks .....

.....

.....

.....

Medical Inspector.

.....191

Respectfully forwarded to the Director, Bureau of General Admin., with the recommendation that the application of.....

.....

for a permit to conduct a day nursery.....

.....

at .....

to allow not more than.....

children be granted, denied.

.....

.....

.....

Permit to expire one year from date of issue.

.....

Chief, Division of Institutions and Day Nurseries.

.....191

Approved and respectfully forwarded.

.....

Director.

Fig. 9. A portion of the outer cover of application blank for permit to conduct a day nursery, and recommendations of the medical inspector detailed to make investigation.

homes are for children. Where the inmates of the institutions are adults, the procedure is the same as in other homes for adults.

Of reformatories and prisons there are twenty-five in town and one out of town. By arrangement with the Commissioner of Corrections, the Division of Institutional Inspection of the Health Department makes regular routine sanitary inspections at these institutions. They include not only reformatories and prisons of all sizes, but also the local minor places of detention attached to the various district police courts.

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The institutions of this type which house their prisoners for periods of some length, as a routine procedure, have their inmates regularly examined physically by our inspectors.

It will be seen by the foregoing how extremely important this work is considered by this Department. Nothing in its inspection is considered too small to overlook, and the inspectors in making their visits to these various institutions are not only supposed to consider the exact rules and regulations laid down by the Department for their guidance, but exercise good judgment from the knowledge that they have acquired in the routine of their daily practice from the observation of other institutions, and even suggest ways, means, and changes that add exceedingly to the value of the work that these institutions are called upon to perform.

During the existence of epidemics, such as influenza, the supervision of all institutions, especially those of child caring institutions, has taught a lesson of great value. It was interesting to note during the recent great epidemic that in those institutions from which the public were excluded rigorously the epidemic gained little foothold and its ravages were comparatively light. This was gratifying, and it was also noted in marked contract with this, that those in households, where every care could be given, often seemed especially subject to this disease.

This was also observed during the epidemic of poliomyelitis. It proves that if an efficient quarantine could be instituted and maintained all infectious disease would be excluded, the lives of the inmates safeguarded, and it would materially ass istin stamping out these scourges.

In regard to institutions devoted to child-caring, we find our greatest contentment in knowing the remarkable good results that are achieved by following out the wise regulations of this department and of allied departments of the state and city. It is now well recognized, and this is as it should be, that all the care that can be given to these little dependents is worthy of our utmost consideration, and it is a pleasure to note the fact that money expended in the welfare of these little ones is, at the present time, not begrudged by any one. All officials of the state and city recognize that money so spent is well spent.

To observe the well ordered and well conducted child-caring institution with its up to date fixtures and appurtenances makes one feel that at least we recognize the value of these future citizens of our state and city, and that time and thought spent in this connection could not be spent in a better cause.

The Department of Health of the City of New York has given much time and attention to the supervision of all institutions, but particularly to the child-caring institutions in which it recognizes the value of frequent and painstaking inspection.

The Division of Institutional Inspection, with its well trained staff, is always on the alert for anything that will increase the value of these institutions, and is ready and willing on all occasions to impart its knowledge for the betterment of existing conditions.

It is believed that the officials of the City of New York, well recognizing the fact that these institutions are worthy of all the care that can be given them, will, in the future as they have in the past, continue to supervise with an anxious eye all the institutions under their care, and that those in power in the city administration will not be niggardly in their appropriations for the furthering of one of the most important activities of the Department of Health, and therefore will not stint us when the appropriations are made covering this work, which is of such great magnitude.

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RE-VOCATIONAL CENTERS.

By CHRISTINE R. KEFAUVER, R. N.,

Supervising Inspector, Division of Industrial Hygiene.

The urgent need of the present time is production and economy. Large employers of labor and producers recognize this, and have repeatedly called the attention of the public to this economic condition. Formerly, waste products were scrapped, but, to-day, salvage departments have been organized in nearly every industry, and waste is now saved and converted into useful materials. Nothing is thrown away until it has been conclusively proven that it no longer contains any element of value.

This new policy of utilizing the waste products of different industries has resulted, in the last 25 years, in the up-building of a vast number of highly important and valuable industries. Cotton seed, once a waste, now is more valuable than cotton itself. Products of slaughter houses are made into fertilizers. Gasoline was once a waste product of crude oil. The waste products of coal tar are now used to make aniline dyes, and innumerable chemical and medicinal preparations are made from the same source. In fact, the list is too long to attempt to catalogue.

It would seem that Labor might well take a leaf out of Capital's experience, as Labor possesses a scrap heap so enormous in disabled, crippled, and defective workers which, so far, no one has made any intelligent or concerted attempt to salvage. Naturally we refer to those workers who in their present state are waste, but through reconstructional schools might be revamped into very useful and helpful material.

No class of society, not even the workers themselves, has ever attempted to formulate any policy of salvage whereby this wastage of human help may be materially reduced, or converted into useful industrial and social material. This failure is largely due to the prevalent attitude of the majority of us, that "we are not our brother's keeper."

It is not an exaggeration to say that the vast number of industrial misfits can be traced to physical conditions, of the existence of which, in most instances, the individual is ignorant.

Physical examination, at the time of the workers' entrance into industry, and repeated annually, or oftener, thereafter, would disclose and correct many of these physical condition. With rectification, human salvage would be enormous, but, unfortunately, Labor has a prejudice, not entirely unwarranted, owing to misuse of this important endeavor in some instances, against labor organizations availing themselves of this important aid.

Labor claims, and with truth in many instances, that physical examinations have been employed in the past to the detriment of the individual examined; that these examinations have been used as a club by employers to rid themselves of employees who, for one reason or another, were distasteful to them. To a certain, but limited extent, this has been true, but that is no reason why Labor should permit itself to be deprived of the benefits of so valuable an aid as physical examinations. Instead it should endeavor to surround the making of these examinations with safeguards which will help the worker to the maximum of comfort and safety, with the minimum of economic risk.

Industry at the present time is very complex. The lives of many men depend upon the physical and mental abilities of a person, or group, often unknown to them. For example, take the case of a man in charge of the operating of a traveling crane carrying tons of metal from one place to another. The lives of many workers, over whose heads this load may travel, are as dependent upon this one operator as is the machine itself for guidance. Should this crane operator be an epileptic, or have a diseased heart, or other disabling physical defect, do you think he should be permitted to endanger these workers by being employed in such a position? This is not an

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extreme case, by any means. On the other hand, if no system of physical supervision or medical overhauling is in force in an establishment, how are we to find out whether this important position is filled by a proper person? How are we to know that such an operator is sound, and physically able to perform the duties of such a responsible position?

In the City of New York, there were organized, some years ago, occupational clinics for the examination of food handlers,—all persons having to do with the handling, distribution or preparation of food, being required by statute to be examined at least once a year by the physicians of these clinics (or by their own private physicians, should they so elect). These clinics were established to detect the presence of communicable diseases, and prevent the spread of such through this source—syphilis, tuberculosis, typhoid, and some other contagions, were detected through these examinations. Persons examined at the clinic and found free from a communicable disease were furnished, free of charge, with a card enabling them to continue their vocation, but individuals detected suffering from a communicable disease, in a dangerous stage, were not permitted to continue at the work of handling food for sale.

This practice may have, in certain instances, worked a hardship on some individual, but this was more than counterbalanced by the good done to the general community in preventing the spread of disease through this infected person. Persons opposed to physical examinations were not slow to utilize this as an argument against workers availing themselves of this help. We have yet to find, however, any labor audience which was in favor of permitting the handling of food for sale by persons known to have a communicable disease in a catching stage.

With our complicated system of food manufacture and distribution, it is nearly impossible to learn anything about the physical conditions under which food is prepared and distributed, unless a known handler of food is proven to be free from communicable disease.

The Department of Health, to whom the people look for protection from infection, feels justified in enforcing this regulation in order to protect the public from unnecessary exposure to disease. As a community we demand such additional aid from our State and Federal authorities as will assure us a pure and uncontaminated food supply.

In much the same way we feel justified in demanding that the lives of our citizens be not unnecessarily endangered by fellow workers, who suffer from physical defects which unfit them for hazardous employment.

Just here, however, comes up the interesting problem of what we are to do with this unfit workman? He must live; his family must be protected; if you throw him out of employment you throw the burden of his support, the support of his dependents, on society, which is ourselves, because we are society. Our taxes, whether direct or indirect, are given to support society; we are thus faced with the bald fact that whether we support the unemployed worker willingly, or unwillingly, we cannot escape supporting him and his dependents, as they will, with time, become a charge upon the community. Here it would pay us to see if we cannot institute some sort of salvage which will convert this human-waste into a useful and contented industrial unit.

Since Unions were organized primarily for the betterment of living and working conditions among wage-earners, and since they possess, to an immense extent, the deserved confidence of the workers, it would seem that any movement, looking to such salvage, not only should originate with the Unions, but be uniformly endorsed by such organizations.

This would necessitate the establishment of vocational centers in which workers, shown to be unfit for the task in which they are engaged, could be taught some other trade in which their particular handicap would be no drawback, and in which they would not jeopardize the safety or lives of others.

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These re-vocational centers could also take over the training of victims of industrial accidents who might be unable to return to their original trade or occupation. Of course, much detail would need to be settled in the formation of these human salvage stations, but the American workingman, who has accomplished so much for the betterment of himself and his fellows, can be trusted to overcome obstacles and difficulties that may arise at the commencement of so colossal an undertaking as this will be.

In offsetting the fear of the industrial worker that physical examinations would be used as an instrument with which to injure him, perhaps it would not be amiss to explain here the system inaugurated by the Division of Industrial Hygiene of the New York City Department of Health to aid workers in industry.

Lectures on health subjects are given in the shops, at the noon hour or, in some instances, in the employers' time. These talks are short and give facts plainly. The lectures are being given by men and women industrial inspectors who know and are in sympathy with the working man, many being former members of unions themselves. These talks are always followed by an open forum in which questions of interest to the workers are invited and answered; and advice is given as to remedying conditions.

When the lecturer becomes known to the workers, the advantage of physical examinations are explained and the offer is made to examine all employed, at the shop, or else at the Industrial Clinic of the Department of Health. Workers desiring to avail themselves of a special service may apply Saturday afternoons to the special clinic of the Division of Industrial Hygiene, 505 Pearl street, Manhattan, where they will be examined, and advised regarding their health. Or, if a union member, arrangements will be made to establish a special clinic at the union headquarters, at a time convenient to all concerned.

In case of women workers, the Division of Industrial Hygiene provides a woman physician, as well as a woman nurse, to give these examinations, as is required by statute.

The results of these examinations are confidential. Not even the name of the person examined appears on the record, unless it is specifically requested—otherwise it is identified by a serial number, the duplicate of which is furnished to the patient, and he can either write or call for a copy of the findings, which will be furnished upon request, free of charge. If defects are found to exist, the worker is advised how to correct them and, in many cases, what particular process in his work, frequently remedial, is responsible for such disability.

In this way defects, of which the individual is ignorant, are often discovered while they are yet in an incipient (beginning) stage and will, in most instances, yield to treatment, promptly applied; whereas, if neglected, they would, in many instances (flat feet, curvature of spine, displacement of organs, etc.) render the worker uncomfortable, in time useless, and a burden on both family and community. Many of these industrial cripples are just in the prime of life, too young to be knocked out by a preventable or correctable condition.

The Division of Industrial Hygiene wishes to announce that it is willing, through its inspectors, to make physical examination of those industrially employed, free of charge, either at the clinic above mentioned, at the shop, at union headquarters, or other place specially selected and mutually agreeable, whenever requested. It will, in every way possible, endeavor to aid the worker to keep his health and his job. This will reflect itself in improved public health, and in great aid to both employer and employee. To-day is the time when much is demanded of the industrially employed, and the one best way to salvage the unfit physically is to take an account of stock and use that which is still useful. The aid and assistance of all concerned is, therefore, most necessary.

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SUMMARY OF VITAL STATISTICS, MONTH OF APRIL, 1920.

The mortality during the month was considerably below that of the corresponding month of 1919, there having been 6,321 deaths reported from all causes, with a death rate of 12.52 per 1,000 of the population, as compared with 6,923 deaths and a rate of 14.03 during the corresponding month of 1919—a decrease in the absolute figures of 602 deaths and in the rate of 1.51 points, which is equivalent to a relative decrease of 762 deaths. There were several causes contributing to this decrease in the mortality. The first and most important one was the decrease in the number of deaths reported from influenza and its secondary causes of death—lobar and broncho-pneumonia—there having been 94 deaths reported during the month from influenza, as compared with 326 in 1919 and 883 deaths from the pneumonias, as compared with 1,145, an increase all told of 494 deaths. The second important factor in the decreased mortality was the lowering of the death rate from pulmonary tuberculosis, there having been 574 deaths reported, as compared with 715 deaths in April of 1919, a decrease of 141. This decrease set in in the beginning of 1918 and continued during that year and the succeeding year, 1919. Every week's mortality of this year has shown an appreciable diminution in the mortality from this important cause. The third factor was the decreased mortality from the chronic degenerative diseases, of which chronic organic diseases of the heart and of the kidneys are the most prominent exponents, there having been 1,449 deaths from these two causes, as compared with 1,554 deaths—a decrease of 105 deaths.

Decreases in the mortality from diphtheria were noted, there having been 113 deaths, as compared with 142, and in the deaths from violence, there having been 292 deaths, as compared with 347. The diseases showing material increases were measles, with 136 deaths, as compared with 19; whooping cough, with 50 deaths, as compared with 14. Deaths from diarrhoeal diseases among children under 5 years of age showed an increase from 102 in April, 1919, to 157 during the month just closed.

Viewed from the point of age grouping, the mortality of children under 5 years of age was somewhat above that of April, 1919, there having been 96 more deaths under this age group. All the other age groups showed the following decrease in the mortality: 5 to 15 years, 23 deaths; 15 to 25 years, 75 deaths; 25 to 45 years, 345 deaths; 45 to 65 years, 139 deaths; 65 years of age and over, 116 deaths.

Deaths among the colored population fell from 328 in April, 1919, to 281. The same number (12) Chinamen died in April, 1920, as in April, 1919. There were 212 deaths of non-residents in the City which, if deducted, would give a death rate for the City of 12.10 per 1,000 of the population.

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POPULATION, MARRIAGES, BIRTHS AND DEATHS, APRIL, 1920.

Boroughs.	Population U. S. Census April 15, 1910.	Estimated Population July 1, 1920. *	Certificates Received and Tabulated.			Rate per 1,000 Based on Department Estimate.			Corrected Death Rate. **	Corr'td Death Rate Correspon'g Month 1919.
			Marriages	B'ths	* D'ths	Marriages.	B'ths.	D'ths.		
Manhattan	2,331,542	2,829,239	3,227	4,745	2,983	13.88	20.42	12.83	12.48	13.38
The Bronx.	430,980	669,233	490	1,277	654	8.91	23.23	11.90	11.31	14.65
Brooklyn..	1,634,351	2,117,908	1,543	4,166	2,048	8.87	23.95	11.77	12.47	14.47
Queens....	284,041	419,506	195	805	451	5.66	23.36	13.09	13.84	14.42
Richmond.	85,969	105,559	77	213	185	8.88	24.57	21.34	17.42	17.39
N. Y. City.	4,766,883	6,141,445	5,532	11,206	6,321	11.61	22.20	12.52	.....	14.03

*Includes 212 deaths of non-residents of the city, which, if deducted, would give a death rate for the city of 12.10 per 1,000.

**Corrected by redistributing deaths according to borough of residence.

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REGISTERED MORTALITY FROM PRINCIPAL CAUSES.

APRIL, 1920.

	Manhattan.		The Bronx.		Brooklyn.		Queens.		Richmond.		City of New York.	
	Apr.		Apr.		Apr.		Apr.		Apr.		Apr.	
	1920	1919	1920	1919	1920	1919	1920	1919	1920	1919	1920	1919
Total, all causes	2901	3056	622	777	2170	2461	477	481	151	148	6321	6923
1. Typhoid Fever	3	2	...	1	1	2	1	...	...	1	5	6
3. Malarial Fever	....	....	...	...	....	....	...	...	...	...	....	....
4. Typhus Fever	....	....	...	...	....	....	...	...	...	...	....	....
5. Measles	67	13	8	...	54	5	6	...	1	1	136	19
6. Scarlet Fever	11	6	3	4	2	6	3	3	..	..	19	19
7. Whooping Cough	28	8	2	...	13	4	6	1	1	1	50	14
8. Diphtheria and Croup	54	59	9	20	40	51	7	9	3	3	113	142
9. Influenza	31	137	19	37	34	131	10	18	...	3	94	326
10. Cholera Nostras	....	....	...	...	....	....	...	...	...	...	....	...
11. Poliomyelitis	....	....	...	...	....	1	...	...	...	...	.....	1
12. Other Epidemic Diseases	22	20	4	6	11	11	1	...	...	...	38	37
13. Tuberculosis Pulmonalis	266	335	70	116	185	202	41	43	12	19	574	715
14. Tuberculous Meningitis	27	30	2	10	20	16	3	5	...	1	52	62
15. Other forms of Tuberculosis	27	25	3	3	17	13	3	2	1	2	51	45
16. Cancer, Malignant Tumor	196	190	44	62	156	146	29	33	10	5	435	436
17. Simple Meningitis	21	16	4	6	8	18	3	4	...	...	36	44
Of which												
17a. Cerebro Spinal Meningitis	8	6	1	...	3	8	...	2	...	...	12	16
18. Apoplexy and Softening of the Brain	31	42	5	6	14	27	7	4	2	8	59	87
19. Organic Heart Diseases	440	444	100	128	345	370	79	76	26	24	990	1042
20. Acute Bronchitis	34	28	3	3	51	35	7	4	5	...	100	70
21. Chronic Bronchitis	7	7	3	1	10	6	1	...	...	...	21	14
22. Pneumonia (exc. Broncho Pneumonia)	218	274	38	74	160	255	40	38	4	12	460	653
22a. Broncho Pneumonia	215	228	36	48	123	186	37	24	12	6	423	492
23. Other Respiratory Diseases	21	15	7	4	24	30	8	7	2	1	62	57
24. Diseases of the Stomach (Cancer excepted)	13	22	2	3	8	10	2	6	1	...	26	41
25. Diarrhoeal Diseases (under 5 years)	75	46	5	8	67	42	9	6	1	...	157	102
26. Appendicitis Typhlitis	22	20	10	10	21	23	7	1	..	2	60	56
27. Hernia, Intestinal Obstruct	35	19	12	6	20	21	4	4	3	3	74	53
28. Cirrhosis of Liver	20	12	3	1	14	14	4	2	2	1	43	30
29. Bright's Disease and Nephritis	157	188	45	34	202	236	38	49	17	5	459	512
30. Diseases of Women (not Cancer)	16	21	6	6	13	9	1	1	...	1	36	38
31. Puerperal Septicaemia	11	8	3	2	5	13	2	1	1	...	22	24
32. Other Puerperal Diseases	19	22	4	8	16	15	2	5		...	42	50
33. Congenital Debility and Malformations	146	125	44	37	105	118	23	26	8	9	326	315
34. Old Age	5	11	1	2	5	7	5	2	1	...	17	22
35. Violent Deaths	154	179	21	21	93	102	16	24	8	21	292	347
a. Sunstroke	....	....	...	...	..	..	...	...	..	..	.....	..
b. Other Accidents	142	165	20	20	88	97	15	23	8	21	273	326
c. Homicide	12	14	1	1	5	5	1	1	...	...	19	21
36. Suicide	34	33	6	4	11	19	5	5	1	1	57	62
37. All other causes	471	470	100	104	321	316	67	78	28	18	987	986
38. Ill-defined causes	4	1	..	2	1	1	...	...	...	...	5	4

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REGISTERED MORTALITY FROM ALL CAUSES AND CERTAIN INFECTIOUS DISEASES, BY WARDS, APRIL, 1920.

BOROUGH OF MANHATTAN.

Wards.	Area in Acres.	Population U. S. Census 1910.	Number of Persons to the Acre.	Typhoid Fever.	Smallpox.	Measles.	Scarlet Fever.	Diphtheria and Croup.	Pulmonary Tuberculosis.	Lobar Pneumonia.	Broncho-Pneumonia.	Diarrhoeal Diseases.	All Causes.	Deaths of Children Under 5 Years.
1	154.0	9,750	63.0	..	..	1	..	..	4	5	2	..	20	7
2	81.0	933	11.5	..	..	..	..	..	..	1	..	..	3	..
3	95.0	1,915	20.2	..	..	..	..	..	..	..	..	..	6	..
4	83.0	21,336	257.1	..	..	1	..	2	3	4	5	2	33	12
5	168.0	5,666	33.7	..	..	..	..	..	..	..	..	..	4	1
6	86.0	19,670	228.7	..	..	2	..	2	10	1	5	1	44	8
7	198.0	102,101	515.6	..	..	1	..	1	6	9	9	1	78	23
8	183.0	33,182	181.4	..	..	..	..	1	4	1	3	1	36	6
9	322.0	64,909	201.6	..	..	2	..	..	14	5	3	..	89	10
10	110.0	66,439	604.0	..	..	1	..	4	5	3	10	1	63	26
11	196.0	136,548	696.7	..	..	3	..	1	5	3	10	3	70	23
12	6,154.0	806,648	131.1	1	..	19	4	19	92	101	79	31	1104	272
13	107.0	64,651	604.3	..	..	..	..	1	1	4	1	1	40	13
14	96.0	38,321	399.3	..	..	1	2	..	6	3	5	1	46	21
15	198.0	30,584	154.5	..	..	1	..	..	2	..	2	1	31	10
16	349.0	55,926	160.2	..	..	..	..	..	13	6	6	1	92	12
17	331.0	172,334	520.6	1	..	6	..	7	15	14	10	6	164	58
18	450.0	62,821	139.6	..	..	3	3	5	8	5	5	7	126	37
19	1,481.0	292,950	197.7	..	..	19	2	7	34	23	26	11	390	92
20	444.0	73,308	165.1	..	..	2	..	1	11	3	12	3	89	26
21	411.0	62,345	151.7	..	..	3	..	2	9	9	9	2	114	21
22	1,529.0	209,154	136.8	1	..	2	..	1	24	18	13	9	259	44
Total.....	13,226.0	2,331,491	176.3	3	..	67	11	54	266	218	215	82	2901	722

BOROUGH OF BROOKLYN.

1	233.0	21,851	93.8	..	..	..	..	..	4	1	..	..	28	2
2	97.7	6,894	70.6	..	..	..	..	..	1	..	..	..	8	..
3	161.4	15,910	98.6	..	..	..	..	1	1	3	4	..	26	6
4	111.3	10,477	94.1	..	..	..	..	..	4	2	..	..	19	4
5	119.4	19,401	162.5	..	..	..	..	..	1	2	4	..	18	6
6	302.9	46,437	153.3	..	..	..	..	1	4	5	2	4	54	20
7	458.5	44,037	96.0	..	..	4	..	2	1	10	8	..	84	27
8	1,843.2	82,687	44.9	..	..	6	..	7	14	16	11	2	159	51
9	623.6	50,501	81.0	..	..	4	..	3	5	12	8	4	91	30
10	318.7	41,238	129.4	..	..	5	..	1	2	4	1	4	50	14
11	252.6	21,659	85.7	..	..	1	..	1	1	5	..	1	31	4
12	663.1	29,262	44.1	..	..	1	..	1	10	4	7	3	105	22
13	230.3	30,091	130.7	..	..	1	..	1	..	5	3	1	35	12
14	282.6	33,329	117.9	..	..	2	..	1	5	6	4	4	38	23
15	244.8	35,887	146.6	..	..	..	..	..	2	4	..	2	32	14
16	244.8	68,244	278.7	..	..	..	..	3	4	..	4	3	40	15
17	823.3	70,346	85.5	..	..	3	..	1	13	8	5	3	83	19
18	873.0	35,708	40.9	..	..	2	..	1	4	3	1	4	51	17
19	413.8	44,860	108.4	..	..	1	..	2	5	1	4	2	58	14
20	461.4	27,463	59.5	..	..	2	..	..	3	7	2	..	45	9
21	483.2	78,741	163.0	..	..	2	..	3	2	8	3	4	72	26
22	1,361.6	81,283	59.7	..	..	4	..	2	13	7	3	4	125	28
23	736.0	65,561	89.1	..	..	1	..	2	8	3	3	3	100	19
24	1,198.5	80,466	67.2	..	..	1	..	1	12	6	4	3	106	21
25	567.8	63,597	112.0	..	..	1	1	..	5	6	6	2	69	14
26	3,590.2	177,963	49.5	..	..	5	..	1	18	9	17	3	181	49
27	400.7	76,000	189.6	..	..	1	..	..	2	2	4	2	62	14
28	884.4	77,451	87.6	1	..	6	..	1	13	7	7	3	137	26
29	3,800.0	72,351	19.0	..	..	1	..	1	10	5	3	5	96	20
30	5,401.1	76,406	14.1	..	..	..	1	2	17	6	3	4	136	19
31	6,312.3	30,988	4.9	..	..	..	..	1	1	3	2	1	28	6
32	5,479.5	17,419	3.2	..	..	..	..	..	..	..	..	..	3	1
Total.....	38,977.8	1,634,508	41.9	1	..	54	2	40	185	160	123	71	2170	552

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BOROUGH OF THE BRONX.

Wards.	Area in Acres.	Population, U. S. Census 1910.	Number of Persons to the Acre.	Typhoid Fever.	Smallpox.	Measles.	Scarlet Fever.	Diphtheria and Croup.	Pulmonary Tuberculosis.	Lobar Pneumonia.	Broncho-Pneumonia.	Diarrhoeal Diseases.	All Causes.	Deaths of Children Under 5 Years.
23	4,267.0	268,880	63.0	..	..	6	2	6	40	23	13	5	331	64
24	22,255.8	162,062	7.3	..	..	2	1	3	30	15	23	2	291	67
Total.	26,522.8	430,942	16.2	..	..	8	3	9	70	38	36	7	622	131

BOROUGH OF QUEENS.

1	4,650.0	61,763	13.3	..	..	..	1	1	13	8	7	5	107	33
2	14,700.0	105,219	7.2	..	..	1	1	1	12	8	16	4	157	38
3	22,000.0	37,171	1.7	1	..	..	1	4	4	4	5	1	55	13
4	36,600.0	67,412	1.8	..	..	2	..	1	11	16	8	..	134	22
5	3,770.0	12,476	3.3	..	..	3	..	..	1	4	1	1	24	6
Total.	81,720.0	284,041	3.5	1	..	6	3	7	41	40	37	11	477	112

BOROUGH OF RICHMOND.

1	3,340.0	27,201	8.1	..	..	1	..	2	5	1	3	..	44	11
2	4,130.0	16,871	4.1	..	..	..	..	..	4	..	2	..	31	6
3	10,050.0	19,812	2.0	..	..	..	..	..	..	1	4	1	36	12
4	8,180.0	10,662	1.3	..	..	..	..	1	2	2	3	..	31	7
5	10,900.0	11,423	1.0	..	..	..	..	..	1	..	..	..	9	1
Total.	36,600.0	85,969	2.3	..	..	1	..	3	12	4	12	1	151	37

DEATHS ACCORDING TO AGE GROUPS, APRIL, 1920

Boroughs.	All Ages.	Under 1 Year.	1 Year and under 2.	Under 5 Years.	5-15 Years.	15-25 Years.	25-45 Years.	45-65 Years.	65 Years and over.	Colored.	Chinese.
Manhattan.	2,901	453	164	722	113	163	507	816	580	198	11
The Bronx..	622	88	16	131	24	37	111	185	134	6	1
Brooklyn...	2,170	329	131	552	94	156	376	589	403	60	..
Queens.....	477	75	16	112	19	22	81	115	128	14	..
Richmond..	151	27	5	37	2	6	23	42	41	3	..
City of N.Y	6,321	972	332	1554	252	384	1,098	1,747	1,286	281	12

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INFECTIOUS DISEASES.

Number of Cases Reported in the City of New York, by Boroughs, During April, 1920, and April, 1919.

	Manhattan.		The Bronx.		Brooklyn.		Queens.		Richmond.		City.	
	April		April		April		April		April		April	
	1920	1919	1920	1919	1920	1919	1920	1919	1920	1919	1920	1919
Typhoid Fever	16	17	3	2	6	6	1	2	...	1	26	28
Typhus Fever	3	....	....	....	....	....	...	...	...	...	3	....
Malaria	3	1	....	....	....	....	...	...	...	...	3	1
Small Pox	....	5	....	....	....	3	...	...	...	...	....	8
Measles	2,193	311	493	41	2,499	66	511	18	81	20	5,777	456
Scarlet Fever	259	204	98	87	213	202	55	74	17	12	642	579
Whooping Cough	336	22	46	11	213	23	90	...	17	5	702	61
Diphtheria and Croup	653	563	156	279	443	453	82	86	11	31	1,345	1,412
Leprosy	....	....	....	....	....	....	...	...	...	...	....	....
Mumps	269	118	76	20	115	133	17	29	7	10	484	310
German Measles	49	31	9	3	49	30	12	6	...	...	119	70
Chicken Pox	224	326	94	72	122	235	25	49	2	11	467	693
Glanders	....	....	....	....	....	....	...	...	...	...	....	....
Anthrax	....	1	....	....	1	....	...	...	...	...	1	1
Rabies	....	....	....	....	....	1	...	...	...	...	....	1
Tetanus	1	1	....	....	1	2	...	...	...	...	2	3
Pellagra	....	....	....	....	....	....	...	...	...	...	....	....
Pulmonary Tuberculosis	609	802	168	171	370	361	96	22	12	18	1,255	1,374
Other Tuberculous Diseases	....	....	....	....	....	....	...	...	...	...	....	....
Syphilis	1,124	687	157	232	367	349	45	21	19	5	1,712	1,294
Gonorrhoea	149	170	38	25	142	145	15	5	2	...	346	345
Cerebro-Spinal Meningitis	9	14	5	3	11	23	1	3	...	...	26	43
Poliomyelitis	....	1	....	....	....	1	...	...	...	...	....	2
Hookworm	....	....	....	....	....	....	...	...	...	...	....	....
Trichinosis	....	....	....	....	....	....	...	...	...	...	....	....
Influenza	118	581	16	178	75	195	3	49	...	15	212	1,018
Pneumonias	832	445	133	116	526	214	120	22	7	9	1,618	806
Total	6,847	4,300	1,492	1,240	5,153	2,442	1,073	386	175	137	14,740	8,505

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MONTHLY METEOROLOGICAL SUMMARY.

APRIL, 1920

Date.	Temperature. (Degrees Fahrenheit.) Maximum.	Minimum.	Mean.	Departure of Mean from Normal.	Relative Humidity. (Per Cent.) 8 a.m.	Precipitation (Inches.) Rain.	Snow.	Wind. (Miles per hour.) Average Velocity.	Prevailing Direction.	Maximum Velocity and Direction.	Sunshine. Number of Hours.
T 1	59	41	50	+ 7	60	.10	0	14.4	E	27 NE	9.4
F 2	49	37	43	0	97	.43	0	18.5	NE	39 E	0
S 3	60	43	52	+ 9	43	0	0	21.8	W	40 W	12.8
S 4	50	37	44	0	66	.17	0	13.1	E	30 W	0
M 5	55	37	46	+ 2	96	.09	0	23.0	NW	46 NW	0.4
T 6	43	31	37	— 7	42	T	T	33.2	W	54 NW	11.4
W 7	48	33	40	— 5	72	T	T	28.3	NW	60 NW	5.4
T 8	39	30	34	—11	35	T	T	26.0	NW	45 NW	9.8
F 9	44	30	37	— 8	40	T	T	14.7	W	25 W	7.5
S 10	49	30	40	— 5	48	0	0	9.5	N	17 N	13.1
S 11	56	33	44	— 2	65	0	0	9.2	S-NW	18 NW	11.9
M 12	51	40	46	0	46	0	0	20.6	SE	46 S	3.0
T 13	52	38	45	— 2	99	.90	0	31.5	NW	53 SE	5.2
W 14	53	36	44	— 4	51	0	0	22.5	NW	41 NW	11.4
T 15	57	38	48	0	63	0	0	23.2	SW	38 S	13.3
F 16	60	40	50	+ 2	57	.41	0	20.5	SW	41 SW	1.8
S 17	50	40	45	— 4	96	.24	0	13.8	NE	30 NE	0
S 18	61	44	52	+ 3	64	0	0	5.9	N	16 N	11.8
M 19	66	42	54	+ 5	44	0	0	18.8	N	35 N	13.5
T 20	65	49	57	+ 7	25	.05	0	12.9	S	26 S	10.6
W 21	61	43	52	+ 2	96	1.00	0	17.5	W	37 W	2.4
T 22	73	46	60	+ 9	56	0	0	22.6	NW	32 W	13.6
F 23	69	46	58	+ 7	88	.41	0	17.9	E-SE	48 NW	7.7
S 24	54	41	48	— 4	48	0	0	41.5	NW	66 NW	13.5
S 25	58	37	48	— 4	43	0	0	28.5	NW	39 NW	12.8
M 26	62	42	52	0	43	.02	0	10.6	S	22 S	9.9
T 27	52	40	46	— 7	92	.10	0	13.2	E	21 E	0
W 28	61	42	52	— 1	92	.43	0	23.2	W	39 W	7.7
T 29	61	44	52	— 2	60	†	0	29.2	W	60 W	12.4
F 30	66	49	58	+ 4	45	.09	0	18.2	W	31 W	9.5
....	..	..	..	....	..	....	..	....	.....	.....	....
Month	Mean 56.1	Mean 39.3	Mean 47.7	Blank	M'n 62	Total 4.44	Total T	Mean 20.1	Prev'l'g NW	Blank	Total 241.8
Normal	56.8	40.9	48.1	Blank	70	3.30	0.8	12.6	NW	Blank	Possible 399.9

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CONTENTS: BABY WELFARE WORK OF THE BUREAU OF CHILD HYGIENE DURING 1919.

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MONTHLY BULLETIN

DEPARTMENT of HEALTH

CITY OF NEW YORK

Public health is purchaseable. Within natural limitations a community can determine its own death rate.

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ROYAL S. COPELAND, M. D., Commissioner of Health.

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BABY WELFARE WORK OF THE BUREAU OF CHILD HYGIENE DURING 1919.

By S. JOSEPHINE BAKER, M. D., *Director,*
and
JACOB SOBEL, M. D., *Assistant Director,*
Bureau of Child Hygiene.

The Division of Baby Welfare of the Bureau of Child Hygiene is charged with the responsibility of safeguarding infants and children from the pre-natal period until school entrance. Such obligation was discharged in the main through the Baby Health Stations, sixty of which were operated and maintained by the Department of Health during the year; 28 in Manhattan, 24 in Brooklyn, 4 in The Bronx, 3 in Queens and 1 in Richmond. The number of stations has gradually increased from the original organization of 15 in 1911, to 55 in 1912, 56 in 1913-1914, 59 in 1915 and 60 in 1916, the additional station during 1919 being operated in the Borough of The Bronx.

As stated last year, these centres established for the supervision and care of infancy and early childhood were at first called Infants' Milk Stations. This term has now been discarded and they have been designated as "Baby Health Stations," a term broader and more comprehensive in scope and one calculated to emphasize the educational and prophylactic objects of the service, rather than the value of milk per se, as the essential factor in the control of infant morbidity and mortality. While established primarily for the care of babies under two years of age, other important activities have developed around these Baby Health Stations as centres for the preservation of child health and life, so that the more important functions of the bureau clearing through them, are as follows:

1. Inspection and supervision of expectant mothers—pre-natal care.
2. Supervision of the care and feeding of babies under two years of age.
3. District or home visiting by a corps of field nurses, throughout the year and particularly during the hot term.
4. Physical examination of children of the pre-school age—two to six years—together with follow-up visits to the home for giving advice and instruc-

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tion as to the physical defects found and ways and means for affecting a remedy or cure of the same.

5. Centres for other departmental as well as local social service activities, and for the co-operation of all agencies in the City, interested in Child Welfare.

The organization of the division has remained substantially the same as in former years, namely, one inspector for three stations, attending each twice weekly, one nurse for each station, in attendance daily, and one nurse's assistant for each station, attending daily. While in former years provision was made through budgetary appropriation for the assignment of a large number of nurses from May to September, inclusive, in order to assist at the Baby Health Stations during the summer months when the attendance was unusually large, and, when children were more liable to become ill because of seasonal conditions, during 1919 only 87 months' nursing service were allowed for this type of work, as against 287 months during 1918, and approximately 275 months in other previous years. The policy of the Division, like that of the Bureau, in all of its activities, has been preventive rather than corrective, and the watchword has been "keep the well baby well."

Instruction and Supervision of Expectant Mothers.

A point has been reached in the supervision of infancy where it appears that the number of infant deaths from congenital diseases is so great that it controls in large measure the curve of infant mortality. In fact, for several years past, statistics have shown that the number of infant deaths from congenital diseases alone was almost equal to or exceeded that of diarrhoeal diseases and respiratory diseases combined.

As far back as 1913, the bureau realized that any further material reduction in the infant mortality rate of the Greater City must come through organized effort to supervise expectant mothers. Congenital diseases bear no relation to errors in infant hygiene and dietetics, but are dependent within certain limits upon conditions in the mother, operative before, at, or shortly after birth of the child. For the past six years the bureau has emphasized the need and importance of a special corps of nurses for this phase of its activities and has submitted not only argumentative statistical data showing the great need of pre-natal care, but has shown from the results of the work accomplished by a limited corps of nurses in recent years, that, if the same methods of approaching the expectant mothers could be applied to the city at large, as was the case in the limited amount of work performed by these nurses, that there would result not only a reduction in the infant mortality rate as a whole, in the infant mortality rate from congenital diseases, fewer deaths during the first months of life, fewer still-births, fewer premature births, fewer cases of sore eyes, fewer accidents to children, and, not only an increased percentage of maternal nursing, an augmented number of deliveries by physicians instead of mid-wives, improved birth registration, care of infants in the early months of life, but, a decided reduction in the maternal mortality rate and in the accidents and injuries of children at birth.

Despite all this, however, no available force for conducting this type of work on a large scale has ever been placed at the disposal of the bureau. For several years past, seven or eight nurses were assigned to this work by virtue of a special budgetary appropriation which allowed for the appointment of special nurses during the summer months. During the year 1919, owing to reduction in the budgetary allowance for these temporary nurses, because of a large number of vacancies in the nursing force, because of special surveys, studies and other activities and because of resignations, only two or three nurses were enabled to take up this work, and even at that irregularly. The result has been that during 1919 fewer expectant mothers have been supervised by the bureau than in any previous year since 1914, the first full year in which this

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work was conducted, although preliminary arrangements had been made for such work in the latter part of 1913. Nevertheless, although few cases of expectant mothers were supervised, the same experience of former years has been recorded, viz., that in the cases supervised the infant and maternal morbidity and mortality rates are far less than those of the city at large. With an annual birth registration of between 135,000 and 140,000, and with approximately 75,000 expectant mothers sorely in need of supervision annually, a corps of three to eight nurses, even when supplemented by the regular Baby Health Station nurses, could scarcely do more than scratch the surface of the problem. A nurse assigned to the instruction and supervision of expectant mothers, if she is to perform the work properly, and if she is to give the expectant mother the full measure of advice necessary for making her pregnancy comfortable, her labor safe and her puerperium uneventful, and if she is to safeguard the health and life of the new-born infant, cannot proceed with her work in a perfunctory way. This type of work requires tact, judgment, conscientiousness, adaptability, perseverence and heart. It is no ordinary matter to instruct an expectant mother in a practical way. For that reason a "pre-natal nurse" cannot supervise conscientiously more than 300 to 400 mothers annually. It is therefore no exaggeration to say, that, if the instruction and supervision of expectant mothers is to be conducted by the Department of Health in a way which would be productive of results, at least one pre-natal nurse should be assigned to each of the sixty Baby Health Stations in the Greater City. This number may appear large, and in a sense prohibitive, but it must be remembered that the field of activity is large and that the need is urgent and immediate. There appears little hope of affecting any great reduction in the infant mortality rate of this City in the near future, unless concerted effort is made in the direction of supervising expectant mothers. We have almost reached the limit in our control of diarrhoeal, respiratory and contagious diseases in infancy. Some improvement in the latter will undoubtedly be made but not in amount sufficient to materially influence the total infant mortality rate.

In addition to the instruction of expectant mothers by the limited special corps of nurses, the regular Baby Health Station nurses offered similar instruction to these mothers, as they visited the stations or as they found them in their homes. This work was necessarily less intensive than that performed by the special corps of nurses, but was not without effect. This supplementary pre-natal service has in recent years reached the following number of expectant mothers:

Year	1914	1915	1916	1917	1918	1919
Number ...	1968	1838	1620	2109	1634	4977

While in former years the pre-natal nurses only followed up the new-born babies for a period of one month, this work was further extended during 1919, to the end that new-born babies were supervised in so far as was possible with our migratory population, for the entire period of the first year, either directly or indirectly through the agencies of the various Baby Health Station nurses.

As has been intimated, the inability of the bureau to conduct pre-natal work as extensively as the indications demonstrated was offset in a measure by the stimulus which our results gave other organizations to take up this work. In co-operation with the Department of Health, the Maternity Center Association has zoned or districted the Borough of Manhattan so as to keep within definite local or neighborhood confines, the pre-natal, obstetrical and post-natal activities of a given area, to reach a larger number of mothers, to prevent overlapping and duplication of effort and to afford the public the greatest amount of good with a minimum of inconvenience. This type of work has been extended to other boroughs, and in the Borough of Brooklyn several pre-natal clinics were established during the year, and several hospitals established pre-natal clinics. In the Borough of The Bronx, the New York Milk Committee,

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and later the Red Cross Chapter, co-operated with the Department of Health in furthering this phase of the activity. Physicians, midwives, maternity institutions, nurse's settlements and child welfare agencies have all shown an augmented interest and a greater effort at co-operation in the care of expectant mothers, and physicians have taken advantage of the nurse's advice to the patients under their direction. Midwives have gladly submitted to the Department the names of expectant mothers under their care for pre-natal advice. Maternity institutions have generously loaned themselves to the zoning idea and have actively co-operated in the examination and admission of mothers and have referred infants discharged from their service to the Baby Health Stations, while nurses' settlements have referred cases ante and post-partum to an increasingly gratifying degree. Charity organizations, philanthropic societies and individuals have become interested to the extent of assigning to and paying for nurses in this field and of providing material relief, in the form of milk, maternity and baby outfits, food, etc. The nurses have organized sewing classes and cooking classes for expectant mothers, which have proved not only of material benefit, but have afforded them a certain amount of social intercourse and relief from home duties so necessary for a proper and healthy mental attitude during pregnancy.

Stillbirths reported by midwives, in which suspicion existed that congenital syphilis was the cause, were visited by inspectors and nurses, and the mothers instructed with a view to securing a living child in a future pregnancy. The well-known high infant mortality rate from congenital diseases among the Negroes was attacked through the co-operation of The Association for Improving the Condition of the Poor, a special nurse being assigned by them in the Columbus Hill District to work exclusively among these people. It has become apparent that the death rate from congenital diseases is comparatively low among the Italians, Russians, Austro-Hungarians and relatively high among the Americans and Negroes. It is not unlikely that the future will tend towards a readjustment of this type of work, in that more attention will be given to native Americans than has been done in the past.

Further extension of the supervision of expectant mothers lies in the direction of compulsory notification of pregnancy, or, in the event of this being impossible, greater co-operation from midwives and maternity institutions in voluntarily reporting cases of expectant mothers registered with them; in forwarding to each newly married couple literature on the subject of the expectant mother; in providing measures, whereby each and every expectant mother at the time of registration with the prospective attendant at birth will be given educational literature on how to conduct herself during pregnancy, so as to maintain and improve her life and well-being, and insure her own safety and that of her new-born infant at the time of delivery.

In its efforts to control the high infant mortality rate from congenital diseases, with the limited force at its command, and to place at the disposal of as many expectant mothers as possible, concise and direct information relative to their care during pregnancy, the bureau prepared during the year a pamphlet on pre-natal care. This pamphlet called the attention of future mothers to the importance of maintaining good health during the period of pregnancy and outlined fourteen points of advice and instruction. Some sound advice was also given to the father of the coming child. Inasmuch as the care of the child during the first month of life is intimately correlated to the pre-natal period of its existence, an "afterword" was added in this pamphlet, in which some twenty-one suggestions were offered as to the proper care of the child during this crucial period of its existence.

Supervision of the Care and Feeding of Babies Under Two Years of Age.

Despite the social unrest, the strained economic conditions of the day, the high cost of living and other disturbing factors of the times, an infant mortality rate of

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81.6, per thousand children born, was reported for the Greater City during 1919, the lowest infant mortality rate in the city's history, the nearest approach to this rate being in 1917, when it was 89. A comparative table of births, infant deaths and infant mortality rate for the last six-year period is as follows:

CITY OF NEW YORK.

Deaths and Death Rate—Under One Year—Per 1,000 *Births Reported.*

Year	Total Births Reported	Deaths Under One Year	Death Rate Per 1,000 Births Reported
1914.....	140,647	13,312	95
1915.....	141,256	13,866	98
1916.....	137,644	12,818	93
1917.....	141,564	12,568	89
1918.....	138,042	12,657	92
1919.....	130,377	10,639	81.6

The infant mortality rate by boroughs for the past four years was as follows:

Infant Mortality by Boroughs—1916, 1917, 1918, 1919.

	Manhattan.	The Bronx.	Brooklyn.	Queens.	Richmond.	Total.
1916.....	102.2	74.1	87.9	93.6	93.6	93.1
1917.....	94.0	79.4	84.9	91.5	91.2	88.8
1918.....	96.1	77.3	90.4	92.9	105.0	91.7
1919.....	87.2	73.9	77.4	79.7	87.8	81.6

We find, therefore, for the City as a whole, there was a reduction of over ten points per thousand children born, in the infant mortality rate, this representing a numerical decrease of 2,018 infant lives below that of 1918. A decrease in the birth registration during 1919 of some 7,665 below that of 1918 was a natural anticipation of the conditions surrounding the war.

The decrease in the City infant mortality rate was participated in by each and every borough, the greatest decrease occurring in the Borough of Richmond and the lowest in the Borough of The Bronx. The Borough of The Bronx, however, maintains, as it has for many years past, the lowest infant mortality rate of all the boroughs, albeit that the reduction in 1919 was less than in any of the other boroughs. The Borough of The Bronx, with an estimated population of over 660,000, may be compared with some of the ten larger cities in the United States, *e. g.*, St. Louis, Cleveland and Boston. From figures at hand, it appears that St. Louis will show the lowest infant mortality rate of all the ten larger cities in the United States during 1919, recording a rate of 75.4, with a birth registration of 13,570, and 1,021 infant deaths. The Borough of The Bronx during 1919 registered 14,788 births and 1,093 deaths, with an infant mortality rate of 73.9, thus showing a lower infant mortality rate than St. Louis, with which it may be reasonably compared. The Borough of The Bronx has shown this favorable status of infant mortality for several years for the following probable reasons: (a) A large Jewish population, among whom the mortality in all of the boroughs is comparatively low, and among whom breast-feeding is largely practiced: (b) A more modern type of tenement dwelling than in some of the larger boroughs; (c) A large number of newly married couples, most of whom have had the advantages of more modern education, in the schools and in the high schools, and have at some

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time or other participated in the organization of the little mothers' leagues and health leagues of the bureau, in which lessons on hygiene and sanitation and baby care have been part of the program; (d) less congestion and overcrowding than in the larger boroughs; (e) the personal and individual care which most of the mothers give to their babies, instead of entrusting them to the care of servants and neighbors; (f) the relatively fewer infant institutions in the borough.

Reports at hand indicate that all of the ten of the larger cities in the United States will report a substantial reduction in the infant mortality rate during 1919. It would therefore have been surprising if New York City had lagged behind in this infant mortality reduction, which seems to have been common to practically all of the larger cities. In analyzing the cause for this record infant mortality rate for New York City the following suggestions present themselves:

(a) The momentum of the educational propaganda instituted by the Bureau of Child Hygiene, since its organization in 1908, is bearing fruit. This momentum is one of enormous proportions and readily realized and appreciated by those engaged in child welfare work. The education given the public is accumulative and carries over. Lessons taught to mothers for infants of former years are now applied to the newcomers. The public has come to learn the lesson of "keep the well baby well." The mother now knows, what communities have also learned, that it costs less to prevent illness than to cure it.

(b) The public has been taught that healthy babies are an asset—unhealthy babies a liability. Mothers now concentrate on the baby. He is usually the first considered as regards diet, care, shelter, clothing and comfort. The money at hand is now first spent for the needs of the baby.

(c) The disproportion between food and living costs and wages which at first showed a debit on the side of wages has progressively changed, so that in many cases of unskilled labor the increased income more than counterbalances the increased cost of living. There is much truth in the statement recently made "that jobs are overpaid and positions are underpaid." Since the mass of workers are unskilled, the import of this statement is readily appreciated. The general public are now eating food and wearing clothes of the better kind, and living under as good, if not better, conditions than in peace times. There are many and notable exceptions, of course, in this regard, but the general truth of the statement holds, it seems.

(d) The nation-wide movement during war times and the early post-war period for better babies and better children has seemed to work out as it did in England, where in the second full year of the war, 1916, the infant mortality rate was 96, the lowest in the history of the United Kingdom. There it was due, not only to a realization on the part of the general public that infant care was of prime importance, but to governmental grants of money for the protection of motherhood and infancy. Here, as a result of an awakening of the public consciousness and as a result of the co-operation of National, State and Municipal bodies, as well as of the co-operation of a large number of private organizations and individuals, the latter resulting as an outgrowth of the war, an unusual amount of attention has been directed towards the supervision of infants and children. The time has some when this civic consciousness has resulted in giving the baby a square deal.

(e) The absence of any epidemic and the low incidence of the commoner children's diseases has been a decided factor in this low infant mortality status. Epidemics, as previously noted, not only cause havoc by attacking infants and young children, but also, because of affecting the adult members of the family, rob these children of the care and necessities of life which are theirs in normal times.

(f) It is not impossible or unlikely that the prohibition wave has had some influence. With less alcoholic indulgence on the part of the fathers, and, fortunately,

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of the mothers, there arises not only more money for family needs and a general improvement of home conditions in general, but a general improvement in family moral tone, in better condition of health, greater family stability, and better earning capacity. A beginning has only been made in this direction, and time will demonstrate the blessings of prohibition, absolute or modified, in the health and general well-being not only of the children but in the adult population.

(g) The general health of the entire population during 1919 has been better than in many years, as may be seen from the following:

Total death rate, all causes, New York City, per 1,000 estimated population :

1910	16.00
1911	15.30
1912	14.41
1913	14.21
1914	14.03
1915	13.93
1916	13.89
1917	13.78
1918	16.71
1919	12.39

It is reiterated that with the better health of the heads of the family, comes better economic conditions, more money, better care of the children, and therefore better provision for their well-being.

(h) The increased interest of municipalities and private organizations and individuals in baby and child welfare has been mentioned. Throughout the period of the war the possibility of the usual effects of combat and its aftermath, namely, a high infant mortality and a decreased rate, has been constantly preached and has stimulated a large number of agencies and individuals to lend their time, energy and money toward the prevention of the errors of omission and commission made by other countries engaged in the war. The weight of this influence has been no small factor in helping to effect a reduction in infant mortality.

(i) The school boys and school girls have been allies of considerable moment in aiding child conservation. They have been responsible for bringing into the homes lessons on child diet and child hygiene, which were particularly emphasized in the school curriculum and through the Bureau of Child Hygiene representative during the year. They have been educated to play their part in the general improvement of family conditions and have learned many lessons which have been of incalculable value to the families as a whole.

(j) The education of the public by National, State and Municipal Food Conservation Committees and by many other committees of a semi-official or private nature in the proper purchase, preparation, selection and care of foods for infants and children, the relative value of these different foods, the adaptation of the same to meet racial characteristics and tastes, the instruction of how to make the dollar bring the greatest return, have all made an impression for good upon the health of infants and children.

(k) At the onset of the war, when a large number of doctors and nurses responded to the call to the colors, many expressed the fear that the dearth of professional talent would react unfavorably upon the community health. Strange to say, the reverse obtained and it was not altogether to be unexpected. This situation compelled many individuals, the large body of so-called neurasthenics, who in normal times not infrequently neglect their children because they have no time to think of anyone but themselves, to draw upon their own resources, to become more self-reliant and to assume

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responsibilities which are their own and which were formerly thrown upon the shoulders of others.

(l) The social and industrial unrest and the uncertainty of the future has made many families cautious in regard to spending money. There has been less gayety than in former years, less social gatherings in hotels and restaurants, and consequently more of the "stay at home" kind have been developed. Domesticity almost always lends itself to betterment of home conditions.

(m) As a result of the increased income among the unskilled classes, many of the laboring and middle classes have "gone to the country" during the summer and have thus afforded their children that change of air and environment which is conducive to an invigoration of mind and body, and with it to an increased vitality and resistance to disease.

As regards the main group diseases which cause deaths of infants, it is very evident that the favorable status of infant mortality in 1919 was due to the very noticeable diminution in the morbidity incidence and the mortality from contagious and respiratory diseases in infancy. While the infant mortality rate from contagious diseases was 4.3 for the Greater City in 1918, it was only 1.9 during 1919. Similarly, while the infant mortality rate for respiratory diseases in infancy was 21.7 during 1918, 15.5 was the rate recorded for 1919. The infant mortality rate from congenital diseases has remained practically stationary as it has for a great many years past, the rate being 38.7 during 1918 and 37.2 during 1919. The infant deaths from diarrhoeal diseases was slightly increased, the rate being 14.7 for 1918 as against 15.9 for 1919. All other diseases showed an infant mortality rate of 12.3 in 1918 as against 11.2 for 1919.

Irrespective of any and all other considerations, however, the outstanding fact remains, that an infant mortality rate of 81.6 for a city so large and so cosmopolitan as New York, and for one which records an annual birth registration far in excess of any other city in the United States, must be considered an accomplishment of no small merit and a tribute to the conscientious work of the employees of the bureau.

For several years past the bureau has made a special effort to keep in check or reduce the inordinately high infant mortality which exists among the Negroes, a rate which in former years was 100 per cent. higher than among the whites. During 1919 there were 3,604 Negro births recorded, with 545 infant deaths, or an infant mortality rate of 151 per thousand children born. This rate, while very high, is nevertheless considerably lower than that of previous years, as will be seen from the following tabulation:

CITY OF NEW YORK.

Infant Death Rate Per 1,000 Births.

Year.	City Rate.	Whites.	Negroes.
1915	98.2	96.2	202
1916	93.1	90.7	193
1917	88.8	87.1	168.9
1918	91.7	89.7	170.8
1919	81.6	79.6	151

An interesting feature in connection with the Negro infant mortality rate is, that while the city birth registration shows a decrease of over 7,000, the birth of Negro babies showed an increase during 1919, 3,604 births being recorded as against 3,272 for 1918; 2,990 for 1917; 2,530 for 1916; 2,614 for 1915.

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Stillbirths.

The stillbirth situation, in so far as recorded cases are concerned, showed a more favorable status than for several years past, as will be seen from the following tabulation:

Stillbirths Reported—City of New York.

1915	6,413
1916	6,253
1917	6,117
1918	6,793
1919	5,984

The unusually large number of cases recorded during 1918 was due, of course, to the wave of influenza, which, if it did not kill pregnant women by way of pneumonia, sepsis or hemorrhage, not infrequently resulted in stillbirth.

The following tables will show in detail the status of the infant mortality situation for the corresponding years 1918-1919 in the Greater City and in the individual boroughs:

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TABLE No. I.

Deaths of Children Under One Year from Certain Causes—Death Rates per 1,000 Births Reported, 1918-1919.

	TOTAL DEATHS.						CONTAGIOUS.						RESPIRATORY.					
	City.	Man.	Bx.	Bklyn.	Qu.	Rich.	City.	Man.	Bx.	Bklyn.	Qu.	Rich.	City.	Man.	Bx.	Bklyn.	Qu.	Rich.
1918—Deaths	12,657	5,710	1,302	4,479	884	282	596	302	60	163	60	11	2,993	1,400	249	1,121	182	41
Death Rate	91.7	96.1	77.3	90.4	92.9	105.1	4.3	5.1	3.6	3.3	6.3	4.1	21.7	23.6	14.8	22.6	19.1	15.3
1919—Deaths	10,639	4,928	1,093	3,679	715	224	251	126	28	75	16	6	2,015	989	109	754	132	31
Death Rate	81.6	87.2	73.9	77.4	79.7	87.8	1.9	2.2	1.9	1.6	1.8	2.3	15.5	17.5	7.4	15.9	14.7	12.2

	CONGENITAL.						DIARRHOEAL.						ALL OTHER CAUSES.					
	City.	Man.	Bx.	Bklyn.	Qu.	Rich.	City.	Man.	Bx.	Bklyn.	Qu.	Rich.	City.	Man.	Bx.	Bklyn.	Qu.	Rich.
1918—Deaths	5,342	2,297	661	1,837	407	140	2,032	931	152	780	124	45	1,694	780	180	578	111	45,
Death Rate	38.7	38.6	39.2	37.1	42.8	52.2	14.7	15.7	9.0	15.7	13.0	16.8	12.3	13.1	10.7	11.7	11.7	16.8
1919—Deaths	4,852	2,139	569	1,678	352	114	2,067	978	155	742	139	53	1,454	696	232	430	76	20
Death Rate	37.2	37.8	38.5	35.3	39.3	44.3	15.9	17.3	10.5	15.6	15.5	20.8	11.2	12.3	15.7	9.0	8.5	8.2

Deaths Under Two Years—Death Rate per 1,000 Estimated Population Under Two Years.

	TOTAL DEATHS.						CONTAGIOUS.						RESPIRATORY.					
	City.	Man.	Bx.	Bklyn.	Qu.	Rich.	City.	Man.	Bx.	Bklyn.	Qu.	Rich.	City.	Man.	Bx.	Bklyn.	Qu.	Rich.
1918—Deaths	16,959	7,663	1,685	6,094	1,149	368	1,465	750	137	444	113	21	4,963	2,254	413	1,922	302	72
Death Rate	65.9	67.8	56.7	65.9	65.1	80.8	5.7	6.6	4.6	4.8	6.4	4.6	19.3	19.9	13.9	20.8	17.1	15.8
1919—Deaths	13,092	6,137	1,330	4,515	848	262	671	355	74	196	34	12	3,126	1,491	309	1,105	180	41
Death Rate	51.9	55.3	47.3	49.4	48.8	58.8	2.7	3.2	2.6	2.1	1.9	2.7	12.4	13.4	11.0	12.1	10.4	9.2

	CONGENITAL.						DIARRHOEAL.						ALL OTHER CAUSES.					
	City.	Man.	Bx.	Bklyn.	Qu.	Rich.	City.	Man.	Bx.	Bklyn.	Qu.	Rich.	City.	Man.	Bx.	Bklyn.	Qu.	Rich.
1918—Deaths	5,370	2,308	665	1,848	408	141	2,413	1,097	178	935	149	54	2,748	1,254	292	945	177	80
Death Rate	20.9	20.4	22.4	20.0	23.1	31.0	9.4	9.7	6.0	10.1	8.4	11.9	10.7	11.1	9.8	10.2	10.0	17.6
1919—Deaths	4,876	2,149	571	1,689	353	114	2,361	1,106	172	866	159	58	2,058	1,036	204	659	122	37
Death Rate	19.3	19.3	20.3	17.4	20.3	25.5	9.4	9.9	6.1	9.5	9.1	13.0	8.2	9.3	7.2	7.2	7.0	8.3

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TABLE NO. 1 (continued).

Deaths, 2-5 years—Death Rate per 1,000 Estimated Population, 2-5 Years.

	TOTAL DEATHS.						CONTAGIOUS.						RESPIRATORY.					
	City.	Man.	Bx.	Bklyn.	Qu.	Rich.	City.	Man.	Bx.	Bklyn.	Qu.	Rich.	City.	Man.	Bx.	Bklyn.	Qu.	Rich.
1918—Deaths.....	4,060	1,740	384	1,552	296	88	860	400	85	298	66	11	1,384	556	120	577	101	30
Death Rate....	11.1	10.7	10.2	11.6	11.2	14.9	2.34	2.46	2.26	2.22	2.51	1.86	3.77	3.41	3.20	4.30	3.84	5.07
1919—Deaths.....	2,652	1,174	301	938	187	52	665	300	89	225	41	10	678	291	76	269	30	12
Death Rate....	6.9	6.9	7.6	6.7	6.6	8.4	1.73	1.77	2.25	1.60	1.46	1.61	1.76	1.71	1.92	1.92	1.07	1.93

	CONGENITAL.						DIARRHOEAL.						ALL OTHER CAUSES.					
	City.	Man.	Bx.	Bklyn.	Qu.	Rich.	City.	Man.	Bx.	Bklyn.	Qu.	Rich.	City.	Man.	Bx.	Bklyn.	Qu.	Rich.
1918—Deaths.....	17	12	3	2	....	....	142	60	11	57	11	3	1,657	712	165	618	118	44
Death Rate....	.05	.07	.08	.02	....	....	.39	.37	.29	.42	.42	.51	4.52	4.37	4.40	4.61	4.48	7.43
1919—Deaths.....	10	8	2	....	....	....	113	39	15	44	12	3	1,186	536	119	400	104	27
Death Rate....	.03	.05	.05	....	....	....	.29	.23	.38	.31	.43	.48	3.09	3.16	3.00	2.85	3.70	4.34

Deaths Under Five Years—Death Rate per 1,000 Estimated Population Under Five Years.

	TOTAL DEATHS.						CONTAGIOUS.						RESPIRATORY.					
	City.	Man.	Bx.	Bklyn.	Qu.	Rich.	City.	Man.	Bx.	Bklyn.	Qu.	Rich.	City.	Man.	Bx.	Bklyn.	Qu.	Rich.
1918—Deaths.....	21,019	9,403	2,069	7,646	1,445	456	2,325	1,150	222	742	179	32	6,347	2,810	533	2,499	403	102
Death Rate....	33.7	34.1	30.8	33.7	32.9	43.5	3.73	4.17	3.30	3.27	4.07	3.05	10.2	10.2	7.9	11.0	9.2	9.7
1919—Deaths.....	15,744	7,311	1,631	5,453	1,035	314	1,336	655	163	421	75	22	3,805	1,782	385	1,374	211	53
Death Rate....	24.7	26.0	24.1	23.5	22.7	29.4	2.10	2.33	2.41	1.82	1.65	2.06	6.0	6.3	5.7	5.9	4.6	4.9

	CONGENITAL.						DIARRHOEAL.						ALL OTHER CAUSES.					
	City.	Man.	Bx.	Bklyn.	Qu.	Rich.	City.	Man.	Bx.	Bklyn.	Qu.	Rich.	City.	Man.	Bx.	Bklyn.	Qu.	Rich.
1918—Deaths.....	5,387	2,320	668	1,850	408	141	2,555	1,157	189	992	160	57	4,405	1,966	457	1,563	295	124
Death Rate....	8.63	8.41	9.94	8.17	9.28	13.4	4.09	4.19	2.81	4.38	3.64	5.44	7.06	7.13	6.80	6.90	6.71	11.8
1919—Deaths.....	4,886	2,157	573	1,689	353	114	2,474	1,145	187	910	171	61	3,243	1,572	323	1,059	225	64
Death Rate....	7.69	7.68	8.46	7.28	7.76	10.7	3.89	4.08	2.76	3.92	3.76	5.71	5.09	5.60	4.77	4.57	4.95	6.0

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TABLE No. II.

Births Reported and Deaths Under One Year of Age for 1918 *and* 1919—*Death Rates Under One Year per* 1,000 *Births Reported.*

	1019.			1918		
	Births.	Deaths under 1 year.	Death Rates per 1000 births.	Births.	Deaths under 1 year.	Deaty Rate per 1,000 births.
Manhattan	56,546	4,928	87.2	59,434	5,710	96.1
Bronx	14,788	1,093	73.9	16,843	1,302	77.3
Brooklyn	47,526	3,679	77.4	49,568	4,479	90.4
Queens	8,966	715	79.7	9,518	884	92.9
Richmond	2,551	224	87.8	2,683	282	105.1
City	130,377	10,639	81.6	138,046	12,657	91.7

TABLE No. III.

Deaths From All Causes Under One Year of Age, 1917, 1918, 1919.

AGES.	MANHATTAN.			THE BRONX.			BROOKLYN.			QUEENS.			RICHMOND.			CITY.		
	1917.	1918.	1919.	1917.	1918.	1919.	1917.	1918.	1919.	1917.	1918.	1919.	1917.	1918.	1919.	1917.	1918.	1919.
Under 1 month	2,346	2,266	2,105	559	559	448	1,730	1,796	1,583	388	370	301	92	127	100	5,115	5,118	4,537
1 mo. and under 2 mos.	551	584	460	101	78	69	350	357	225	81	58	51	15	14	16	1,098	1,091	821
2 mos. and under 3 mos.	460	446	395	73	67	60	243	261	242	47	55	46	31	20	13	854	849	756
3 mos. and under 6 mos.	1,075	1,040	993	161	128	136	695	665	612	129	116	104	63	54	61	2,123	2,003	1,906
6 mos. and under 9 mos.	881	941	748	157	141	86	596	629	491	113	111	83	51	33	35	1,798	1,855	1,443
9 mos. and under 12mos	809	807	658	124	141	79	528	639	368	87	113	49	32	41	22	1,580	1,741	1,176
Total under 1 year	6,122	6,084	5,359	1,175	1,114	878	4,142	4,347	3,521	845	823	634	284	289	247	12,568	12,657	10,636

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TABLE No. IV.

Deaths From Influenza and Pneumonia for 1918 *and* 1919 *Under One Year and Under Five Years.*

	INFLUENZA.				BRONCHO PNEUMONIA.				LOBAR PNEUMONIA.			
	1919.		1918.		1919.		1918.		1919.		1918.	
	Under 1 year.	Under 5 years.	Under 1 year.	Under 5 years.	Under 1 year.	Under 5 years.	Under 1 year.	Under 5 years.	Under 1 year.	Under 5 years.	Under 1 year.	Under 5 years.
Manhattan	73	201	171	565	602	1,035	780	1,486	226	510	379	988
Bronx	18	52	32	130	144	248	157	308	45	102	74	198
Brooklyn	69	214	163	612	465	795	677	1,447	155	371	259	758
Queens	16	60	40	124	98	145	121	256	17	42	39	113
Richmond	5	14	24	65	21	33	24	50	7	17	13	44
City	181	541	430	1,496	1,330	2,256	1,759	3,547	450	1,042	764	2,101

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The Baby Health Stations have been the predominating agency of the Bureau, for the control of the morbidity and mortality of infancy and early childhood. In an effort to reduce infant mortality, two essential basic principles have been kept in mind: (a) the encouragement of maternal nursing; (b) efforts to secure the enrollment of babies as soon after birth as possible.

(A) Encouragement of Maternal Nursing.

Throughout the year a continuous and persistent campaign of education on the value and importance of breast-feeding as a life-saving measure and as a means of increasing bodily resistance against inroads of disease has been fostered. During 1919, as in previous years, the majority of the infants enrolled at the Baby Health Stations were breast-fed exclusively or in part, and mothers who, upon admission, were inclined or desired to discontinue maternal nursing, or who had done so previously, were instructed in all matters bearing upon hygiene, diet, personal and home cleanliness, exercise and other related subjects, with a view to secure refunctioning breasts and a continuance or renewal of breast-feeding. No child was permitted to be artificially fed unless all measures for the maintenance of a supply of breast milk had been tried and found wanting. Success of this policy is shown by the following:

CITY OF NEW YORK.

Infants Admitted to Baby Health Stations.

Year.	Per Cent. Breast-fed Exclusively.	Per Cent. Breast-fed and Bottle-fed.	Per Cent. Bottle-fed.
1913	54.85	19.60	25.55
1914	62.47	17.21	20.32
1915	59.	18.	23.
1916	68.	14.	18.
1917	68.3	13.2	18.5
1918	67.	17	16.
1919	66.9	17.	16.

In analyzing the character of feeding at the various stations as well as for the City and boroughs as a whole, it has been found that the highest percentage of babies breast-fed exclusively takes place among the Jewish and Italian clientele. Not only has an effort been made to increase maternal nursing at the Baby Health Stations, but as a means of increasing the number of available wet nurses in the City, the inspectors of the Bureau, when investigating the genuineness and cause of stillbirths reported by midwives, made careful inquiry of the mothers' willingness and ability to wet-nurse another baby, subject, of course, to all the necessary physical and blood examinations. These cases were filed at the department and a wet-nurse registry was gradually established. It must be stated, however, that the number of women so registered was comparatively few.

(B) Efforts to Secure Enrollment of Babies as Soon After Birth as Possible.

The year 1919 lent corroboration to the statements of former years, as to the urgent need of reaching infants as soon after birth as possible, if any appreciable reduction in infant mortality is to be secured. The number of deaths under one year of age for 1919, grouped according to months, will be seen from one of the tables previously attached (Table No. 3). Out of a total of 10,639 infant deaths during the year, the following deaths took place during the various months of the first year:

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NEW YORK CITY.

Age.	Number of Deaths.	Percentage of Deaths During the First Year.
Under 1 month	4,537	42.7
1 to 2 months	821	7.7
2 to 3 months	756	7.1
3 to 6 months	1,906	17.9
6 to 9 months	1,443	13.6
9 to 12 months	1,176	11.0

In other words, over 40% of all deaths during the first year of life takes place during the first month of life, and over 50% during the first three months of life. To reduce infant mortality, therefore, to any great degree, it becomes necessary to reach the infant early—the sooner the better. The high percentage of infant deaths during the first month of life is intimately correlated to the supervision of the expectant mother, in that approximately 75% of deaths during the first month are due to congenital diseases. It is perfectly natural, therefore, that the Bureau should seek the enrollment of babies at the stations, as soon after birth as possible, and its campaign of pre-natal care and the co-operation of private agencies has resulted in an incresed enrollment at the Baby Health Stations of infants under one month of age—from 2%, in 1914, to over 12%, in 1919, as follows:

CITY OF NEW YORK.

Age of Infants Admitted to Baby Health Stations—Arranged by Percentage.

	1915.	1916.	1917.	1918.	1919.
Under 1 month	11.66	13.50	11.75	11.	12.3
1 to 2 month	22.62	21.10	25.63	26.	26.3
2 to 3 months	20.91	17.20	18.28	18.	18.1
3 to 6 months	25.26	22.00	22.49	23.	22.
6 to 9 months	11.98	14.20	12.20	13.	12.3
9 to 12 months	7.57	12.00	9.65	9.	8.9

While the number of babies under one month of age enrolled at the Baby Health Stations increased somewhat during 1919, it is evident that additional effort must be made for the enrollment of a larger number of babies directly after birth. This is a phase of the work which merits the attention of all those interested in the control of infant mortality.

The popularity of the Baby Health Station service in the public eye is attested by the large enrollment from year to year, as follows:

CITY OF NEW YORK.

Year.	No. of Stations.	No. of Children Under 1 Year of Age Attending Stations During Year.	No. of Children 1 to 2 Years of Age. Attending Stations During Year.	No. of Children Under 2 Years of Age Attending Stations During Year.
1911	15	5,006	2,146	7,152
1912	55	21,316	9,136	30,452
1913	56	26,350	11,293	37,643
1914	56	27,165	11,643	38,808
1915	59	37,197	8,865	46,062
1916	59	39,646	8,656	48,302
1917	59	41,496	5,569	47,165
1918	59	41,691	4,491	46,182
1919	60	39,304	6,571	45,875

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SUMMARY OF VITAL STATISTICS FOR THE MONTH OF MAY, 1920.

There were 5,798 deaths reported during the month of May, giving a death rate of 11.12 per 1,000 of the estimated population, as compared with 5,960 deaths, and a rate of 11.69, in the corresponding month of 1919—a decrease, in the absolute figures, of 162 deaths, and, in the rate, of .57 of a point, which is equivalent to a relative decrease of 297 deaths. The mortality experience of the month was notable by reason of the increased mortality from the two infectious diseases of childhood—measles and whooping cough—there having been 90 deaths from the former disease and 50 from the latter, as compared with 34 and 8, respectively, in the corresponding month of 1919. A noteworthy decrease was that in the mortality from pulmonary tuberculosis, there having been 574 deaths reported, as compared with 680—a decrease of 106 deaths. Other forms of tuberculosis also showed a material decrease in their mortality.

There was approximately a 40 per cent. decrease in the mortality from diphtheria; 142 deaths were reported from this cause during May, 1919, as compared with 81 deaths during the past month. The mortality of other epidemic diseases decreased from 42 to 24. The deaths from influenza dropped from 148 to 62, and there was a corresponding decrease in the mortality of both forms of pneumonia. The deaths from accidents were also fewer during the past month, 326 deaths during May, 1919, as compared with 275 during the month just passed. The only diseases that showed an appreciable increase in their mortality during the past month, as compared with the corresponding month of last year, were diseases of the heart, Bright's disease, and congenital debility and malformations. The noteworthy fact, then, in the mortality records of last month was the marked decrease in the mortality of all the acute infectious diseases, except measles and whooping cough.

Comparison of the age distribution of the mortality of the past month with May, 1919, reveals that the saving of life effected during the last month has been between the ages of 15 and 65 years; that in the younger and older age groups the mortality was higher during the past month than during the corresponding month of last year.

During the past month 4,515 marriages were reported, as compared with 3,765 during May, 1919. From this one might argue that, notwithstanding the high cost of living, financial conditions are better to-day than they were a year ago. This is indeed a hopeful sign, and it may be reasonably supposed that this increase in the marriage rate will be reflected in an increased birth rate next year. The marriage rate for the month was 8.66, as compared with 7.39 during the corresponding month of 1919.

During the month 10,364 births were reported, against 10,555 during May, 1919, the respective rates being 19.89 and 20.71.

Morbidity.

The increase in the mortality of measles and whooping cough was a reflection of the increased morbidity from these causes. During the past month 3,922 cases of measles were reported in the city, against 978 during May, 1919; 624 cases of whooping cough were reported, as compared with 70 during May of last year. During the month 629 cases of chickenpox were reported, as compared with 963 during May, 1919, a decrease of 334. There was a decrease in the morbidity of pulmonary tuberculosis of 100 cases, 1,211 as against 1,311.

The cases of syphilis reported showed a tremendous increase—2,179, as compared with 1,422. This increase, however, was no doubt due to more complete registration than to an actual increase in the number of cases, and this would indicate that physicians are co-operating more fully with the Department by reporting their cases, and probably also that more cases are taking treatment as a result of the campaign carried on against this disease during the last several years.

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POPULATION, MARRIAGES, BIRTHS AND DEATHS, MAY, 1920.

Boroughs.	Population U. S. Census April 15, 1910.	Estimated Population July 1, 1920.	Certificates Received and Tabulated.			Rate per 1,000 Based on Department Estimate.			Corrected Death Rate. **	Corr'td Death Rate Correspon'g Month 1919.
			Marriages	B'ths	* D'ths	Marriages.	B'ths.	D'ths.		
Manhattan	2,331,542	2,829,239	2,816	4,403	2,617	11.73	18.34	10.90	10 62	12.02
The Bronx.	430,980	669,233	440	1,179	648	7.75	20.76	11.41	10 88	11.18
Brooklyn..	1,634,351	2,117,908	1.046	3,773	1,974	5.82	20.99	10.98	11.58	11.48
Queens....	284,041	419,506	161	779	426	4.52	21.88	11.99	12.66	11.14
Richmond.	85,969	105,559	52	230	133	5.80	25.67	14.85	10.83	12.39
N. Y. City.	4,766,883	6,141,445	4,515	10,364	5,798	8.66	19.89	11.12	.....	11.69

*Includes 180 deaths of non-residents of the city, which, if deducted, would give a death rate for the city of 10.78 per 1,000.

**Corrected by redistributing deaths according to borough of residence.

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REGISTERED MORTALITY FROM PRINCIPAL CAUSES.

MAY, 1920.

	Manhattan.		The Bronx.		Brooklyn.		Queens.		Richmond.		City of New York.	
	May.		May.		May.		May.		May.		May.	
	1920	1919	1920	1919	1920	1919	1920	1919	1920	1919	1920	1919
Total, all causes	2551	2836	618	613	2081	2018	451	384	97	109	5798	5960
1. Typhoid Fever	1	5	1	...	1	2	1	1	1	...	5	8
3. Malarial Fever	....	....	...	...	....	....	...	...	...	...	....	....
4. Typhus Fever	....	1	...	...	....	....	...	...	...	...	....	1
5. Measles	38	18	3	...	48	13	1	3	...	...	90	34
6. Scarlet Fever	20	13	2	2	3	2	...	...	1	...	26	17
7. Whooping Cough	26	5	2	...	17	3	4	...	1	...	50	8
8. Diphtheria and Croup	28	69	8	18	38	49	6	5	1	1	81	142
9. Influenza	28	65	9	17	20	52	5	12	...	2	62	148
10. Cholera Nostras	....	....	...	...	....	....	...	...	...	...	....	...
11. Poliomyelitis	....	2	1	...	....	....	..	...	...	...	1	2
12. Other Epidemic Diseases	10	25	2	2	9	12	3	2	...	1	24	42
13. Tuberculosis Pulmonalis	291	366	62	78	169	192	43	35	9	9	574	680
14. Tuberculous Meningitis	31	37	9	2	14	17	...	5	...	1	54	62
15. Other forms of Tuberculosis	24	34	1	4	10	10	2	3	...	...	37	51
16. Cancer, Malignant Tumor	191	220	76	58	143	138	30	24	4	11	444	451
17. Simple Meningitis	16	21	6	4	9	16	2	2	1	4	34	47
Of which												
17a. Cerebro Spinal Meningitis	11	9	..	...	5	11	1	2	1	2	18	24
18. Apoplexy and Softening of the Brain	28	30	9	5	20	38	11	3	2	2	70	78
19. Organic Heart Diseases	380	384	101	113	391	334	68	59	19	16	959	906
20. Acute Bronchitis	27	15	3	3	32	20	3	...	...	...	65	38
21. Chronic Bronchitis	2	7	1	1	5	4	...	1	...	...	8	13
22. Pneumonia (exc. Broncho Pneumonia)	138	184	28	38	131	134	23	34	3	11	323	401
22a. Broncho Pneumonia	149	159	28	33	101	101	26	26	3	6	307	325
23. Other Respiratory Diseases	20	18	5	9	19	23	2	...	2	...	48	50
24. Diseases of the Stomach (Cancer excepted)	14	20	5	...	12	11	2	1	1	...	34	32
25. Diarrhoeal Diseases (under 5 years)	59	66	4	13	40	35	7	4	5	1	115	119
26. Appendicitis Typhilitis	40	24	9	7	33	26	2	5	3	1	87	63
27. Hernia, Intestinal Obstruct	26	27	5	5	18	8	6	3	..	1	55	44
28. Cirrhosis of Liver	8	17	2	1	10	8	3	4	...	1	23	31
29. Bright's Disease and Nephritis	157	141	40	22	193	210	33	30	10	4	433	407
30. Diseases of Women (not Cancer)	11	16	3	3	10	12	2	3	...	...	26	34
31. Puerperal Septicaemia	10	4	1	4	7	5	4	2	...	...	22	15
32. Other Puerperal Diseases	17	19	8	1	17	16	4	2	...	...	46	38
33. Congenital Debility and Malformations	144	139	35	21	117	109	33	14	7	4	336	287
34. Old Age	7	9	3	1	8	7	6	2	...	2	24	21
35. Violent Deaths	121	178	26	26	116	107	27	29	11	13	301	353
a. Sunstroke	....	....	...	...	...	....	...	...	...	...	....	....
b. Other Accidents	113	161	24	24	105	100	22	28	11	13	275	326
c. Homicide	8	17	2	2	11	7	5	1	...	...	26	27
36. Suicide	28	27	3	9	20	26	8	9	...	2	59	73
37. All other causes	456	464	115	112	298	278	83	61	13	16	965	931
38. Ill-defined causes	5	7	2	1	2	....	1	...	...	...	10	8

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REGISTERED MORTALITY FROM ALL CAUSES AND CERTAIN INFECTIOUS DISEASES, BY WARDS, MAY, 1920.

BOROUGH OF MANHATTAN.

Wards.	Area in Acres.	Population U.S. Census 1910.	Number of Persons to the Acre.	Typhoid Fever.	Smallpox.	Measles.	Scarlet Fever.	Diphtheria and Croup.	Pulmonary Tuberculosis.	Lobar Pneumonia.	Broncho-Pneumonia.	Diarrhoeal Diseases.	All Causes.	Deaths of Children Under 5 Years.
1	154.0	9,750	63.0	..	..	..	..	1	2	1	2	1	19	9
2	81.0	933	11.5	..	..	..	..	..	..	..	..	..	3	1
3	95.0	1,915	20.2	..	..	..	..	..	..	..	..	..	..	..
4	83.0	21,336	257.1	..	..	..	..	1	6	4	3	2	31	12
5	168.0	5,666	33.7	..	..	..	..	..	..	..	..	..	2	..
6	86.0	19,670	228.7	..	..	..	..	..	4	2	2	..	25	5
7	198.0	102,101	515.6	..	..	..	2	..	8	5	3	3	83	26
8	183.0	33,182	181.4	..	..	..	..	1	11	4	4	2	42	13
9	322.0	64,909	201.6	..	..	..	..	1	15	3	1	3	73	11
10	110.0	66,439	604.0	..	..	3	..	3	3	4	4	..	39	14
11	196.0	136,548	696.7	..	..	2	..	1	6	2	3	..	44	12
12	6,154.0	806,648	131.1	..	..	13	11	10	105	62	54	18	1017	245
13	107.0	64,651	604.3	..	..	..	..	..	3	4	1	1	36	11
14	96.0	38,321	399.3	..	..	3	..	..	8	7	8	3	58	25
15	198.0	30,584	154.5	..	..	..	..	..	4	1	2	..	31	10
16	349.0	55,926	160.2	..	..	1	..	..	9	1	3	2	77	16
17	331.0	172,334	520.6	..	..	2	..	2	19	11	10	11	158	44
18	450.0	62,821	139.6	..	..	1	1	1	11	1	6	3	81	24
19	1,481.0	292,950	197.7	1	..	5	3	2	37	11	15	6	324	71
20	444.0	73,308	165.1	..	..	2	..	2	7	5	7	4	82	22
21	411.0	62,345	151.7	..	..	1	2	3	9	3	6	2	88	25
22	1,529.0	209,154	136.8	..	..	5	1	..	24	7	15	5	238	53
Total.....	13,226.0	2,331,491	176.3	1	..	38	20	28	291	138	149	66	2551	649

BOROUGH OF BROOKLYN.

1	233.0	21,851	93.8	..	..	..	..	..	..	2	3	..	28	8
2	97.7	6,894	70.6	..	..	..	..	..	1	2	..	..	8	2
3	161.4	15,910	98.6	..	..	..	..	..	2	2	..	..	19	..
4	111.3	10,477	94.1	..	..	..	..	..	8	2	1	1	24	2
5	119.4	19,401	162.5	..	..	1	..	..	1	2	..	..	14	5
6	302.9	46,437	153.3	..	..	3	..	1	2	4	8	1	55	18
7	458.5	44,037	96.0	..	..	2	..	3	9	5	5	2	73	18
8	1,843.2	82,687	44.9	..	..	3	..	2	11	9	7	4	130	38
9	623.6	50,501	81.0	..	..	6	..	2	2	6	6	3	84	27
10	318.7	41,238	129.4	..	..	4	..	..	7	4	7	2	66	25
11	252.6	21,659	85.7	..	..	..	..	..	2	4	2	1	36	11
12	663.1	29,262	44.1	..	..	6	1	4	13	3	3	2	122	25
13	230.3	30,091	130.7	..	..	..	..	1	1	3	2	..	29	13
14	282.6	33,329	117.9	..	..	..	..	1	4	..	2	2	28	13
15	244.8	35,887	146.6	..	..	..	..	..	3	2	1	..	21	5
16	244.8	68,244	278.7	..	..	..	..	2	3	3	4	..	47	11
17	823.3	70,346	85.5	..	..	..	1	2	9	5	7	1	102	24
18	873.0	35,708	40.9	..	..	1	..	1	4	6	5	1	64	23
19	413.8	44,860	108.4	..	..	1	..	..	3	2	2	1	46	11
20	461.4	27,463	59.5	..	..	3	..	..	4	2	3	..	49	12
21	483.2	78,741	163.0	..	..	3	..	1	5	3	5	2	70	24
22	1,361.6	81,283	59.7	..	..	1	..	1	10	7	3	3	135	24
23	736.0	65,561	89.1	..	..	..	..	1	16	7	2	..	88	6
24	1,198.5	80,466	67.2	..	..	1	..	2	5	4	2	3	87	24
25	567.8	63,597	112.0	..	..	1	..	..	3	2	..	2	49	8
26	3,590.2	177,963	49.5	1	..	5	..	4	11	11	7	5	150	44
27	400.7	76,000	189.6	..	..	..	..	..	4	2	2	..	61	14
28	884.4	77,451	87.6	..	..	1	..	6	13	10	2	2	128	23
29	3,800.0	72,351	19.0	..	..	2	..	2	7	6	2	1	88	20
30	5,401.1	76,406	14.1	..	..	3	1	2	4	7	6	7	149	28
31	6,312.3	30,988	4.9	..	..	1	..	..	2	3	1	..	26	4
32	5,479.5	17,419	3.2	..	..	..	..	..	..	1	1	..	5	1
Total.....	38,977.8	1,634,508	41.9	1	..	48	3	38	169	131	101	46	2081	511

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BOROUGH OF THE BRONX.

Wards.	Area in Acres.	Population, U. S. Census 1910.	Number of Persons to the Acre.	Typhoid Fever.	Smallpox.	Measles.	Scarlet Fever.	Diphtheria and Croup.	Pulmonary Tuberculosis.	Lobar Pneumonia.	Broncho-Pneumonia.	Diarrhoeal Diseases.	All Causes.	Deaths of Children Under 5 Years.
23	4,267.0	268,880	63.0	..	..	2	..	5	35	14	15	4	320	64
24	22,255.8	162,062	7.3	1	..	1	2	3	27	14	13	2	298	50
Total.	26,522.8	430,942	16.2	1	..	3	2	8	62	28	28	6	618	114

BOROUGH OF QUEENS.

1	4,650.0	61,763	13.3	1	..	1	..	..	13	5	6	..	87	24
2	14,700.0	105,219	7.2	..	..	..	..	2	9	7	7	6	130	33
3	22,000.0	37,171	1.7	..	..	..	..	1	2	1	6	..	65	12
4	36,600.0	67,412	1.8	..	..	..	..	3	17	9	4	1	139	25
5	3,770.0	12,476	3.3	..	..	..	..	..	2	1	3	1	30	4
Total.	81,720.0	284,041	3.5	1	..	1	..	6	43	23	26	8	451	98

BOROUGH OF RICHMOND.

1	3,340.0	27,201	8.1	..	..	..	1	..	2	1	3	3	32	6
2	4,130.0	16,871	4.1	1	..	..	..	..	1	..	..	2	19	4
3	10,050.0	19,812	2.0	..	..	..	..	1	4	1	..	..	22	5
4	8,180.0	10,662	1.3	..	..	..	..	..	2	..	..	..	16	3
5	10,900.0	11,423	1.0	..	..	..	..	..	..	1	..	2	8	2
Total.	36,600.0	85,969	2.3	1	..	..	1	1	9	3	3	7	97	20

DEATHS ACCORDING TO AGE GROUPS, MAY, 1920

Boroughs.	All Ages.	Under 1 Year.	1 Year and under 2.	Under 5 Years.	5-15 Years.	15-25 Years.	25-45 Years.	45-65 Years.	65 Years and over.	Colored.	Chinese.
Manhattan.	2,551	417	139	649	113	139	485	657	508	182	7
The Bronx..	618	81	15	114	38	30	106	197	133	6	..
Brooklyn...	2,081	311	106	511	96	122	332	516	504	61	..
Queens.....	451	70	11	98	20	27	84	108	114	4	..
Richmond..	97	13	4	20	8	5	19	18	27	1	..
City of N.Y	5,798	892	275	1392	275	323	1,026	1,496	1,286	254	7

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INFECTIOUS DISEASES.

Number of Cases Reported in the City of New York, by Boroughs, During May, 1920, and May, 1919.

	Manhattan.		The Bronx.		Brooklyn.		Queens.		Richmond.		City.	
	May		May		May		May		May		May	
	1920	1919	1920	1919	1920	1919	1920	1919	1920	1919	1920	1919
Typhoid Fever	9	16	4	3	12	11	4	2	...	...	29	32
Typhus Fever	....	1	....	....	1	....	...	...	...	...	1	1
Malaria	2	1	....	....	....	1	...	...	...	...	2	2
Small Pox	....	1	....	....	1	....	...	...	...	...	1	1
Measles	1,374	576	287	65	1,769	252	388	77	104	8	3,922	978
Scarlet Fever	293	220	92	76	208	177	68	69	29	12	690	554
Whooping Cough	303	26	64	5	188	30	58	7	11	2	624	70
Diphtheria and Croup	634	848	159	247	387	401	105	95	23	16	1,308	1,607
Leprosy	....	2	....	....	....	....	...	...	...	...	....	2
Mumps	257	192	75	43	119	186	32	26	4	10	487	457
German Measles	83	36	31	9	44	28	18	4	12	5	188	82
Chicken Pox	278	502	73	101	219	284	49	65	10	11	629	963
Glanders	....	....	....	....	....	....	...	...	...	...	....	....
Anthrax	1	....	....	....	....	....	...	...	...	...	1	....
Rabies	....	....	....	....	....	....	...	...	...	...	....	....
Tetanus	1	1	....	....	....	....	...	...	...	...	1	1
Pellagra	1	....	....	....	....	....	...	...	...	...	1	....
Pulmonary Tuberculosis	646	798	129	116	316	353	103	25	17	19	1,211	1,311
Other Tuberculous Diseases	....	....	....	....	....	....	...	...	...	...	....	....
Syphilis	1,257	755	230	194	623	434	49	29	20	10	2,179	1,422
Gonorrhoea	237	224	63	25	170	129	11	7	6	5	4 87	390
Cerebro-Spinal Meningitis	12	19	2	5	7	18	...	4	...	2	21	48
Poliomyelitis	....	3	....	....	1	....	...	...	...	...	1	3
Hookworm	....	....	....	....	....	....	...	...	...	...	....	....
Trichinosis	1	....	....	....	....	....	...	...	...	...	1	....
Influenza	34	89	16	43	355	52	4	10	...	4	409	198
Pneumonias	583	180	116	50	29	92	67	24	...	5	795	351
Total	6,006	4,490	1,341	982	4,449	2,448	956	444	236	109	12,988	8,473

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MONTHLY METEOROLOGICAL SUMMARY.

MAY, 1920

Date.	Temperature. (Degrees Fahrenheit.) Maximum.	Minimum.	Mean.	Departure of Mean from Normal.	Relative Humidity. (Per Cent.) 8 a.m.	Precipitation (Inches.) Rain.	Snow.	Wind. (Miles per hour.) Average Velocity.	Prevailing Direction.	Maximum Velocity and Direction.	Sunshine. Number of Hours
S 1	59	42	50	— 4	86	.08	0	25.3	NW	51 NW	8.7
S 2	54	41	48	— 7	46	0	0	26.8	NW	44 NW	13.2
M 3	58	41	50	— 5	76	T	0	10.7	N	19 S	9.8
T 4	57	44	50	— 5	66	.08	0	14.0	NW	44 N	6.5
W 5	59	41	50	— 6	41	0	0	14.2	N	24 S	14.1
T 6	65	42	54	— 2	54	0	0	18.0	SW	30 S	12.7
F 7	63	47	55	— 1	61	T	0	18.2	S	36 S	10.6
S 8	54	48	51	— 6	86	.63	0	12.5	S	26 S	0
S 9	69	48	58	+ 1	66	0	0	15.2	NW	32 NW	14.3
M 10	76	55	66	+ 9	45	.01	0	23.6	SW	50 W	11.2
T 11	66	51	58	0	68	.15	0	7.5	NE-SE	24 NW	7.2
W 12	68	50	59	+ 1	54	0	0	11.2	S	26 S	13.2
T 13	58	46	52	— 6	92	.35	0	8.6	S	20 S	2.8
F 14	52	45	48	—11	74	.49	0	7.2	S	35 NW	0
S 15	61	43	52	— 7	54	T	0	18.0	NW	30 NW	11.7
S 16	67	45	56	— 3	47	0	0	13.2	N	24 S	14.5
M 17	70	50	60	0	42	0	0	16.6	W	33 S	14.5
T 18	66	49	58	— 2	48	0	0	13.5	S	26 S	11.2
W 19	72	55	64	+ 4	60	0	0	10.9	S	24 S	12.9
T 20	72	57	64	+ 3	80	T	0	13.2	S-W	31 S	10.9
F 21	69	57	63	+ 2	95	.98	0	8.3	SE-S	24 NW	6.1
S 22	77	53	65	+ 4	57	.04	0	12.6	N	24 NW	11.4
S 23	61	50	56	— 6	86	.01	0	13.0	NE	21 NE	2.5
M 24	59	49	54	— 8	81	T	0	8.0	E	15 NE	4.3
T 25	71	53	62	0	74	.01	0	11.4	NE	22 N	13.8
W 26	72	56	64	+ 1	73	.05	0	12.2	NE	24 NE	14.8
T 27	74	57	66	+ 3	59	0	0	9.0	NE	19 S	14.8
F 28	76	55	66	+ 3	80	0	0	9.7	S	20 S	14.8
S 29	78	56	67	+ 3	49	0	0	15.2	N	27 N	14.9
S 30	74	56	65	+ 1	53	0	0	9.6	SE	20 SE	14.9
M 31	70	54	62	— 2	78	0	0	13.1	S	27 SE	14.3
Month	Mean 66.0	Mean 49.5	Mean 57.8	Blank	M'n 66	Total 2.88	Total 0.0	Mean 13.5	Prev'l'g S	Blank	Total 326.6
Normal	68.4	51.9	59.3	Blank	72	3.18	0.0	10.9	NW	Blank	Possible 449.0

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DIRECTORY OF DEPARTMENT OF HEALTH.

OFFICES.

Headquarters: 505 Pearl Street, Manhattan.....Telephone, 9400 Worth
Borough of The Bronx, 3731 Third Avenue.....Telephone, 1975 Tremont
Borough of Brooklyn, Flatbush Avenue and Willoughby Street.....Telephone, 4720 Main
Borough of Queens, 372-374 Fulton Street, Jamaica, L. I.....Telephone, 1200 Jamaica
Borough of Richmond, 514-516 Bay Street, Stapleton, S. I.....Telephone, 440 Tompkinsville
Office Hours—9 a. m. to 5 p. m.; Saturdays, 9 a. m. to 12 m.

HOSPITALS FOR CONTAGIOUS DISEASES.

Manhattan—Willard Parker Hospital, foot of East 16th Street. Telephone, 1600 Stuyvesant.
The Bronx—Riverside Hospital, North Brother Island. Telephone, 4000 Melrose.
Brooklyn—Kingston Avenue Hospital, Kingston Ave. and Fennimore St. Telephone, 4400 Flatbush.
Queens—Queensboro Hospital, Flushing Ave. and Lotts Lane. Telephone, 2600 Jamaica.

LABORATORIES.

Diagnosis Laboratory, Serological Laboratory, 505 Pearl Street. Telephone, 9400 Worth.
Research Laboratory, Chemical Laboratory, Vaccine Laboratory, foot of East Sixteenth Street. Telephone, 1600 Stuyvesant.
Antitoxin Farm and Laboratory, Otisville, N. Y.

BABY HEALTH STATIONS.

Manhattan.

1.	172 East 3d St.	8.	224 West 63d St.	15.	348 East 74th St.	22.	73 Cannon St.
2.	513 East 11th St.	9.	326 East 11th St.	16.	205 East 96th St.	23.	95 Suffolk St.
3.	306 Avenue A.	10.	114 Thompson St.	17.	209 Stanton St.	24.	206 Madison St.
4.	443 1st Ave.	11.	315 East 112th St.	18.	343 Pleasant Ave.	25.	214 Monroe St.
5.	225 East 107th St.	12.	244 Mulberry St.	19.	108 Cherry St.	26.	289 Tenth Ave.
6.	241 East 40th St.	13.	508 West 47th St.	20.	197 Hester St.	27.	95 Forsyth St.
7.	174 Eldridge St.	14.	78 Ninth Ave.	21.	27 Suffolk St.	28.	2155 Fifth Ave.

Brooklyn.

1.	268 South 2d St.	7.	359 Manhattan Ave.	13.	604 Manhattan Ave.	19.	698 Henry St.
2.	621 Fourth Ave.	8.	49 Carroll St.	14.	179 Bedford Ave.	20.	594 Sutter Ave.
3.	208 Hoyt St.	9.	76 Johnson Ave.	15.	296 Bushwick Ave.	21.	167 Hopkins St.
4.	144 Navy St.	10.	233 Suydam St.	16.	994 Flushing Ave.	22.	592 Park Ave.
5.	2346 Pacific St.	11.	323 Osborn St.	17.	176 Nassau St.	23.	165 Ten Eyck St.
6.	184 Fourth Ave.	12.	107 Dupont St.	18.	129 Osborn St.	24.	49 Amboy St.

The Bronx.

1. 511 East 149th St. 2. 428 East 133d St. 3. 354 Webster Ave. 4. 2380 Hughes Ave.

Queens.

1. 114 Fulton Ave., Astoria. 2. 22 Maspeth Ave., Maspeth. 3. 753 Onderdonk Ave., Ridgewood

Richmond.

689 Bay Street, Stapleton, S. I.

CLINICS FOR VENEREAL DISEASES.

ADVISORY CLINICS.

Manhattan.

Main Clinic, 505 Pearl Street..... Week days, 9 a. m. to 12 M.

Brooklyn.

Prospect Clinic, Fleet and Willoughby Streets..... Daily except Sunday, 9 a. m. to 12 noon.
Monday and Friday, 8 p. m. to 9 p. m.

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CLINICS FOR VENEREAL DISEASES—ADVISORY CLINICS—Continued

TREATMENT CLINICS.

Manhattan.

Chelsea Clinic, 307 West 33d Street..... { Monday and Friday, 9 a. m. to 12 noon.
Wednesday and Friday, 7 p. m. to 10 p. m.

Brooklyn.

Prospect Clinic, Fleet and Willoughby Streets..... { Daily except Sunday, 9 a. m. to 12 a. m.
Monday and Friday, 8 p. m. to 9 p. m.

ANTI-RABIC CLINICS.

Manhattan—505 Pearl Street. Telephone, 9400 Worth. Week days, 1 to 4 p. m.

Brooklyn—Fleet and Willoughby Streets. Telephone 4720 Main. Week days, 10 a. m. to 1 p. m. Sundays and holidays, 10 a. m. to 12 m.

The Bronx—Third Avenue and St. Paul's Place. Tel., 1975 Tremont. Week days, 11 a. m. to 1 p. m.

Queens—Patients attend Brooklyn or Manhattan Clinic.

Richmond—Patients attend Manhattan Clinic.

On Sundays and holidays patients of all Boroughs attend Brooklyn Clinics. Hours on these days, 10 a. m. to 12 noon.

Immunization against typhoid fever will be given on request at these clinics.

OCCUPATIONAL CLINICS.

Manhattan—128 Prince Street. Week days, 9 a. m. to noon. Telephone, 9586 Spring.

The Bronx—493 East 139th Street. Week days, 2 to 4 p. m. Telephone, 6399 Melrose.

Brooklyn—Fleet and Willoughby Streets. Week days, 2 to 4 p. m. Telephone, Main, 4720.

Queens—Jamaica, 372-374 Fulton Street, Jamaica, 2 to 4 p. m.; Saturday, 9 to 12 noon. Telephone 1200 Jamaica.

Corona, 127 46th Street (near Alburtis Avenue "L" Station), 2 to 4 p. m.; Saturday, 9 to 12 noon. Telephone, 3255 Newtown.

Ridgewood, 753 Onderdonk Avenue, Ridgewood, 2 to 4 p. m.; Saturday, 9 to 12 noon. Telephone, 3624 Evergreen.

Queens Plaza, 138 Hunter Avenue. Telephone, 2589 Astoria.

Richmond—Richmond Bay and Elizabeth Street, Stapleton, 2 to 4 p. m.; Saturday, 9 to 12 noon. Telephone, 1558 Tompkinsville.

DIVISION OF NARCOTIC REGISTRATION AND NARCOTIC RELIEF STATION.

Manhattan—145 Worth Street. 2 to 8 p. m. daily except Sunday and holidays.

BRANCH OFFICES AND TUBERCULOSIS CLINICS.

Manhattan—Corlears, 331 Broome Street. Telephone, 7914 Orchard.
Stuyvesant, 540 East 13th Street. Telephone, 2859 Orchard.
Yorkville, 439 East 57th Street. Telephone, 2526 Plaza.
Jefferson, 341 Pleasant Avenue. Telephone, 2375 and 828 Harlem.
Riverside, 481 West 145th Street. Telephone, 9068 Audubon.
Chelsea, 307 West 33d Street. Telephone, 3471 Greeley.
Washington, 130 Prince Street. Telephone, 9586 Spring.
Day Camp, Ferryboat "Manhattan," foot East 90th Street. Telephone, 1581 Lenox.

The Bronx—Tremont, St. Paul's Place and Third Avenue. Telephone, 1975 Tremont.
Mott Haven, 493 East 139th Street. Telephone, 5702 Melrose.

Brooklyn—Prospect, Fleet and Willoughby Streets. Telephone, 4720 Main.
Eastern District, 306 South 5th Street, Williamsburg. Telephone, 1982 Stagg.
Bedford, 420 Herkimer Street. Telephone, 2220 Decatur.
Brownsville, 64 Pennsylvania Avenue. Telephone, 2732 East New York.
Bay Ridge, 215 60th Street. Telephone, 2434 Sunset.
Day Camp, Ferryboat "Rutherford," foot of Broadway. Telephone, Williamsburg, 5223.

Queens—Jamaica, 372-374 Fulton Street, Jamaica. Telephone, 1200 Jamaica.
Corona, 127 46th Street (near Alburtis Avenue "L" Station). Telephone, 3255 Newtown.
Ridgewood, 753 Onderdonk Avenue, Ridgewood. Telephone, 3624 Evergreen.
Queens Plaza, 138 Hunter Avenue. Telephone, 2589 Astoria.

Richmond—Richmond, Bay and Elizabeth Streets, Stapleton. Telephone, 1558 Tompkinsville.

HOSPITAL DIAGNOSIS STATION.

Manhattan—128 Prince Street. Hours, 2 to 4 p. m., Tuesday, Thursday, Saturday.

SANATORIUM FOR TUBERCULOSIS.

Otisville, Orange County, N. Y. (via Erie Railroad from Jersey City). Telephone, 13 F 1 Otisville.

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CONTENTS: BABY WELFARE WORK OF THE BUREAU OF CHILD HYGIENE DURING 1919.

MONTHLY BULLETIN
OF THE
DEPARTMENT of HEALTH
CITY OF NEW YORK

Public health is purchasable. Within natural limitations a community can determine its own death rate.

Published monthly by the Department of Health, City of New York, 505 Pearl St., New York, N. Y. Entered as Second-Class Matter October 16, 1917, at the Post Office at New York, N. Y. Under Act of March 3, 1879. Subscription 10 cents per annum.

ROYAL S. COPELAND, M. D., Commissioner of Health.

VOL. X. JULY, 1920. No. 7

BABY WELFARE WORK OF THE BUREAU OF CHILD HYGIENE DURING 1919*

By S. JOSEPHINE BAKER, M. D., *Director.*
and
JACOB SOBEL, M. D., *Assistant Director,*
Bureau of Child Hygiene.

The influence of the Baby Health Stations has shown itself in the improved general condition of the children on admission, greater personal and home hygiene and cleanliness, relatively fewer cases of mal-nutrition and disorders of digestion, a better and more intelligent response of parents to instruction and advice, an increased confidence in the nurse as a friendly visitor, a better knowledge on how to give "first-aid" in illness, and an improved regularity in attendance. The increasing enrollment of a large number of babies from districts beyond the station confines, and of those who purchase their milk from other sources, bears testimony to the fact that the public have come to look upon the stations as educational centres or preventoria, rather than as milk depots. The patrons have realized more than ever that it is better and easier to look after the baby when well, and to keep it well, than to cure it after it is sick.

In some stations the enrollment has been exceptionally large, too large in fact to afford proper care and supervision. Baby Health Stations with an enrollment of from 500 to 700 babies, found it difficult to give each and every child the individual attention that is necessary. It has, therefore, been found advisable to modify the control of the station attendance, so as to produce the best result for the largest number, in that, instead of insisting upon regular attendance for all babies at least once a week, arrangements have been perfected so that they attend either bi-weekly, weekly, every two or three weeks, according as they are, very young, sick, weak, or delicate, breast-fed or artificially fed, or entirely well. A definite working schedule was formulated and cases were considered as active or inactive within their own group. By this means, baby health stations with an extremely large enrollment, have reduced the

* Continuation of subject from MONTHLY BULLETIN of June.

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daily attendance of babies to within reasonable limitations, and the babies that needed attention most were given special consideration. Provision was also made to keep a watchful eye on babies that were sick, weak, delicate or suffering from mal-nutrition, and these cases were noted on the history card as "S" (sick) or "—" (minus) babies. In former years babies of this type, whose mothers refused to bring them regularly to the station without sufficient reason or warrant, were dropped from the rolls after every effort was made to keep them in regular attendance. At the present time this class of babies, whether enrolled at the station, or, when found on home visits, are kept under observation and followed up at home, where all necessary instruction and advice are given. In other words, a large number of frail babies, who formerly were not brought to the station, and who, therefore, failed to receive proper care, have been supervised. This is in line with the principle, that if Mahomet won't come to the mountain, the mountain must go to Mahomet. This, it seems, is a definite step forward in infant mortality control, and the sins or the ignorance of the parents are not permitted to react upon the infants. While it is appreciated that with a large number of this class of infants under supervision at the stations, the number of station infants deaths will increase, nevertheless, it is felt that a certain number of these babies would otherwise have died, and in this wise the general city infant morbidity and mortality were improved.

This policy was the outgrowth of years of experience in district or home visiting by nurses, during the summer months, where it was found that of the mothers and babies referred by them at the close of the summer, to the various baby health stations, only 3 to 6 per cent. took advantage of this opportunity and enrolled the babies at the stations.

That the public have come to look upon the Baby Health Stations as prophylactic centres or places designed for the purpose of keeping well babies well, was exemplified by the fact that during 1919, only 4.6 per cent. of all the babies enrolled were found to be suffering at the time of admission with gastro-enteritis, and only 12.1 per cent. of the children enrolled were found to be suffering from mal-nutrition.

Milk Dispensed at Baby Health Stations—Although the milk dispensed at the Baby Health Stations is considered, as aforenoted, the lesser part of the stations' usefulness and influence, the amount sold is necessarily large since it is dispensed not only to babies who must be artificially fed, but to nursing mothers, expectant mothers, older children suffering from mal-nutrition or other disorders, cases of pulmonary tuberculosis, convalescents from influenza or other general diseases, school children in the open-air classes, in fact, to anyone who presents certification from a duly accredited physician, or allied child-caring or social agency, to the effect, that in their opinion, the person making application is in need of milk and unable to pay the prevailing market price.

During 1919, 5,612,132 quarts of milk were sold as against 5,815,425 quarts in 1918, and 5,982,412 in 1917. There is a diminution therefore in the amount of milk sold at the Baby Health Stations for 1919. This diminution is seen in all of the boroughs, with the exception of The Bronx and Richmond, the increase in The Bronx being due to, in all likelihood, the opening of an additional station; the increase in Richmond being due to a far better service of the milk company than in recent years. This situation is shown in the following tabulation:

Milk Sold (Quarts) at Baby Health Stations.

Year	Manhattan	The Bronx	Brooklyn	Queens	Richmond	Total
1918.....	2,762,213	157,265	2,740,247	102,307	53,393	5,815,425
1919.....	2,653,465	189,870	2,612,284	101,209	55,304	5,612,132

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It would seem at first glance as if the advance in the price of milk during the year as against former years would have caused a decided decrease in the amount of milk sold. The fact of the matter is, however, that as compared with the latter part of 1918, the price of milk as sold at the Baby Health Stations was practically the same, as follows:

Selling Price of Milk at Baby Health Stations.

1918—		1919—	
January to October.	12-13½c. per qt.	January to April.....	15c. per qt.
October to December	15-16 c. per qt.	April to July.....	14c. per qt.
		July to November.....	15c. per qt.
		November 23 to December 31	16c. per qt.

The diminution in the amount of milk dispensed at the Baby Health Stations during 1919, as against 1918, to the extent of over 200,000 quarts, is not accounted for altogether by the high price of milk. In the first place it must be remembered that in the early part of the year, when there was a controversy going on between the producers and distributors—the so-called milk strike—there were weeks when the amount of milk delivered to the baby health stations was considerably below that of its normal output. At one considerable period, only 47 per cent. of the normal delivery was made to the stations. Furthermore, it must be remembered that the registration at the Baby Health Stations during 1919 was slightly below that of 1918, and while this number approximates only 300, nevertheless, several hundred quarts a day for a year is quite an item.

In fact, the increase in the price of milk at the Baby Health Stations, which has of course, kept pace with the increase in price in the open market, and which practically doubled itself at the stations, as it has in the open market, from 8 cents per quart in October, 1916, to 16 cents per quart at the end of the year, has not in itself diminished the sale of milk at these stations. It seems as if the maintenance of the large sales at the stations may be accounted for as follows:

(1) The public have become educated to the fact that milk is not only an essential, vital and indispensable food for infants and growing children, but, even at the advanced price, is the most economical of foods, in that, ounce for ounce, at the price, it offers the largest amount of nourishment, health and vitality. The public have come to purchase milk in many cases to the exclusion of other less essential and less nourishing foods, particularly for infant and child consumption.

(2) The public have learned the economy of paying more for a safe, clean, pure milk, and have found that paying more for milk is cheaper than paying for illness or funerals.

(3) No matter what the market price of the grade of milk dispensed at the stations has been—Grade "A" pasteurized, bottled—the differential between the station and the open market price has always been at least 3 cents less; in fact, during one period of the year, the differential was 4 cents per quart, and for a short time, 5 cents per quart, the latter being the largest differential since the organization of the baby health stations. With from three to five cents saved to the public on each quart, the economic advantages accruing to the poorer element of the community, on the basis of almost six million quarts annually, is readily appreciated, and demonstrates how, when the market price goes beyond a certain limit, a large number of mothers who otherwise would purchase milk from delivery wagons, dairies, stores, etc., wend their way to the Baby Health Stations.

(4) Lowering the bars of the sale at the Baby Health Stations to those who in normal times could well afford to pay the market price, but, to whom in these abnormal days, the prevailing market price worked a hardship.

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Such falling off in the sale of milk at the Baby Health Stations as took place during 1919 did not appear due to any decreased consumption by the infants and young children. It has been previously noted, that milk is sold at these centres not only for infants and young children, but to older children and adults, under certain circumstances. It is well known that under natural conditions, milk at the baby health stations sells at a price within the means of these adults, that is to say from 10 to 12 cents per quart, or perhaps, 13 cents per quart, and that they purchase this milk at the baby health stations because of the desire to secure the best type of milk within their means, and secondly, because of the saving as against the market price, which, with the aforementioned station price, would usually be approximately 13 cents to 16 cents per quart, or perhaps a little more. In other words, 13 cents per quart, for the station type of milk, is about the limit of burden which these people can carry. With the price of milk during this year at the stations, ranging from 14 to 16 cents per quart, and the market price ranging from 18 to 20 cents per quart, for the same type of milk, it is very probable that many of these adults and older children at least, have sought the open market for their milk supply and have purchased for their consumption Grade "B," loose milk, which sold during the year in the stores from 11 to 13 cents per quart—a price more commensurate with their income. It may be that the aforementioned circumstance took place in the feeding of a certain amount of infants and young children, and that the slight increase in infant mortality from diarrhoeal diseases during 1919, the rate being 15.9 per thousand children born, as against 14.7 per thousand children born in 1918, may be accounted for by this fact.

The increased price of milk has an interesting psychological side to it, in the sense that while the public clamors loudly at an increase of 100 per cent. in the cost of so vital a necessity, it seems to take as a matter of course, an increase of 100 to 200 per cent. or more, in the price of less essential foods, wearing apparel, luxuries. etc. One thing is certain, milk is the infant's and poor man's food and nothing should be left undone to place at their disposal a full supply at the lowest possible price, consistent with genuine economic conditions. There seems to be a hitch, a kink, somewhere between the producer's price and amount the consumer is called upon to pay, and until some definite, reliable and fair legislation is enacted to provide for a liberal supply of milk to all at a reasonable price, the public will continue to pay.

In order to safeguard the quality of milk dispensed to the babies at the stations. every effort has been made by the bureau, acting in co-operation with the Bureau of Food and Drugs, to supervise its transportation and delivery to the end that the temperature of the milk was kept at or below 50 deg. F. from the time of delivery until it reached the home of the mother, and, that the bacterial count was not higher than that provided for in the rules and regulations governing the sale and distribution for this grade of milk, namely, 30,000 bacteria per c. c. To this end, periodic bacterial counts of samples have been made by the Bureau of Food and Drugs, and this bureau informed of the situation. Also, the milk was so supervised that it was well iced up to the time of delivery, and the companies delivering ice at the stations supervised to the extent that the necessary amount of ice was delivered for the refrigerators at each station. The temperature of the milk delivered was taken early every morning, by the nurse's assistant, and, any unusual rise in temperature was made the subject of special investigation. Rules of procedure governing the care of the milk at Baby Health Stations and the home, for nurses and nurses' assistants, were forwarded to each station.

While Grade "A" bottled milk has been the only type of milk dispensed at the stations since their organization (except of course, under the unusual circumstances of strike or difficulty in transportation, when for several days at a time Grade "B" milk would be delivered), there was so much public clamoring to the effect that

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families found it difficult to provide the necessary amount of milk at the prevailing market price, that the Department decided to try the experiment of offering for sale, at several of the baby health stations, in the afternoons, Grade "B" bottled milk at 15 cents per quart, the same selling in the open market at 18c. per quart, at the time. The object of this sale was an effort to assist the tenement population to reduce the cost of living, and to place at their disposal on the cash and carry basis, a good quality of milk, below the prevailing price. This experiment which was begun in the latter part of 1919, at nine stations in the Borough of Manhattan, seemed to offer some promise, so that within a comparatively short time the sale was extended to other stations in the Borough of Manhattan, and to stations of other boroughs. The sale of this milk was eventually conducted at all the stations of the Greater City, with three exceptions, the latter being due to conditions over which the Department had no control.

This sale was conducted in the afternoon, after the regular baby health service was completed, and special care was exercised of course, to see that the infants and young children continued to receive Grade "A" bottled, pasteurized milk, the type which is recommended for infant feeding.

As the result of publicity given by the department, to the relation of a plentiful supply of clean, wholesome milk to the nutrition of infants and growing children, and, to the existence of mal-nutrition on a comparatively large scale, among children of the City, a number of private citizens and commercial concerns, forwarded sums of money to the Department with the request that the same be used in furnishing milk free of cost to the children of those families, which the Department found sorely in need of this food.

In the early part of the year when the amount of available milk was low, a large number of communications were received by the bureau from the public, stating that the milk dealers failed to supply them with the necessary amount of milk for their infants and children. These cases were referred to the Bureau of Food and Drugs, and, in each instance, an acknowledgment of the letter was made directly to the writer, and a letter was forwarded to the milk concern specified, requesting that they make every effort to supply milk to the complainant. The bureau has held fast to its policy of dispensing milk in quart bottles, rather than in the form of prepared individual feedings. Formulae were regulated by the doctor-in-charge, to fit the individual child. Practical demonstrations of the prescribed formulae were given with special care, by the nurses at the stations, and in the home, and repeated until the nurse was convinced that the mother understood. No hard and set rules were outlined for the physicians in the artificial feeding of infants, except that two fundamental principles were insisted upon in their method of feeding; (1) to encourage, urge, and secure breast-feeding whenever possible; (2) to fit the formula to the individual needs of the child, as regards age, weight, development, digestive capacity, tolerance. For the most part simple dilutions of whole milk with the addition of the various sugars were used. In difficult feeding cases, various food modifications and proportions were tried. Cases of mal-nutrition and marasmus, were given particular attention at the stations and in the homes, and effort was made in selected cases to have a neighbor nurse the baby or furnish expressed breast milk.

Unfortunately, the infant mortality rate is the only numerical valuation at present available, to show the influence of the Baby Health Stations' service, and other educational propaganda of the bureau, although it is admitted on all sides that their effect on infant and child morbidity is far greater, but alas not ascertainable. A true index of infant mortality control, is the reflection which this type of work has upon the mortality of later childhood—from 2 to 5 years, and under 5 years of age. That this situation was favorable for the year 1919, may be seen from the following tabulation:

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CITY OF NEW YORK.

Mortality Rates—2 to 5 Years and Under 5 Years of Age.

Death Rate Per Thousand Estimated Population.

Year	2 to 5 Years	Under 5 Years
1917	7.80	30.0
1918	11.1	23.7
1919	6.9	24.7

It is therefore seen that the efforts of the bureau in the control of infancy and early childhood, during 1919, resulted in an infant mortality rate, and a mortality rate between 2 and 5 years, and under 5 years of age, which were the lowest ever recorded in the history of the city.

It has been customary in speaking of the infant mortality rate of the City of New York, to compare it with the other large cities of the United States. During 1917-1918, this rate for New York City compared most favorably with the other nine largest cities in the United States, in that for 1917 it was the lowest of the ten largest cities, St. Louis being first, and in 1918 it was the lowest of any of the ten largest cities in this country. During 1919, a similar situation obtained, and we find that New York City with an infant mortality of 81.6 shows the lowest rate of any of the ten largest cities in the country, with the exception of St. Louis, which recorded a rate of 75.2.

Below will be found two tables, one showing the infant mortality rates of the ten largest cities in the United States, for the years 1917-1918; the second showing the number of births, deaths and the infant death rate for the ten largest cities of the United States during 1919:

Infant Mortality Rates for the Ten Largest Cities in the United States Based on 1,000 Births Reported.

	1917	1918
New York City	88.8	91.7
St. Louis	79.6	94.4
Cleveland	100.0	97.74
Detroit	103.4	107.0
Boston	99.6	114.8
Buffalo	103.66	121.5
Pittsburgh	111.0	122.5
Philadelphia	111.0	123.9
Chicago	106.3	131.3
Baltimore	119.26	147.7

Infant Death Rates of the Ten Largest Cities in the United States, 1919.

	Births	Deaths	Infant Death Rate
New York City	130,377	10,639	81.6
St. Louis	13,570	1,021	75.2
Cleveland	19,200	1,743	90.8
Detroit	25,377	2,460	96.8
Boston	18,735	1,814	96.8
Buffalo	12,708	1,396	109.8
Pittsburgh	14,307	1,656	115.3
Philadelphia	42,046	3,778	89.8
Chicago*	63,359	5,766	91.0*
Baltimore	17,631	1,711	97.0

* Estimated only. Not willing to give out number of births, as they cannot enforce registration, on account of lack of funds.

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As stated, it has been customary to compare New York City with the other nine largest cities of the United States, and yet, a glance at table No. 2, will show that the comparison is hardly fair. New York City is practically in a class by itself, as far as birth registration is concerned. The number of births recorded for New York City during 1919, namely, 130,377, equals practically the sum total of births recorded in Philadelphia, Chicago and Detroit, namely 130,782. The comparison furthermore, hardly seems fair when one considers that the combined population of Chicago, Philadelphia, Detroit, and St. Louis, based on the estimated population of 1918, is about the same as that of New York City alone. If comparisons are to be made at all, it might be reasonable to classify the Borough of The Bronx with St. Louis, and the Borough of Brooklyn with Chicago. On this basis, we find that the Borough of Brooklyn, with an estimated population of about the same as Chicago, shows an infant mortality rate for 1919 of 77.4, as against 91 for Chicago; and the Borough of The Bronx, an infant mortality rate for 1919 of 73.9 as against 75.2 for St. Louis.

It is true that the reduction in some of the other larger cities of the United States during 1919 has been greater than that of New York City. It must be remembered, however, that during this year the conditions which prevailed in New York City were far more unusual than those in any of the ten largest cities in the United States, in that New York City was the clearing house for all conditions, which might have affected adversely the infant mortality rate—commercial, industrial, economical and military—and that this together with the large floating population in New York City during the war increased the attendant dangers of those factors which make for a rise in infant mortality. From whichever standpoint, therefore, we view the infant mortality situation in New York City during 1919, it must be admitted that the results both for the city as a whole and for the individual boroughs was most gratifying.

Studies—Surveys—Exhibits.

In order to co-operate in the reduction of the diphtheria incidence among infants and young children, the Baby Health Station service assisted in performing Schick tests to determine the susceptibles and administered toxin-antitoxin injections, to the limit of their capacity. This work was performed at the various stations, particularly in the Boroughs of Manhattan and Brooklyn, by the field force of the bureau, in co-operation with representatives of the Bureau of Laboratories. Literature was distributed, talks were given by inspectors and nurses, parents were urged to have the children tested and injected, homes were visited, cases were secured, and a general educational drive, as to the effects of toxin-antitoxin as a preventive of diphtheria, was made. An endeavor was made to educate the public as to the harmlessness of the tests and to the great benefits which could be derived from the immunization, as a preventive measure against diphtheria, which shows its greatest incidence and mortality among children from 1 to 5 years of age.

While the number of injections and tests performed at the stations was not very large, the way was paved for a greater popularization of this procedure, which, it is expected will be taken up to a greater degree during 1920.

During 1918 this work was begun and extended in the Borough of Manhattan. During 1919, greater emphasis was given to this procedure in the Borough of Brooklyn. All in all, almost 1,500 children were "Schicked," and some 1,400 immunized.

More intensive surveys of Baby Health Station districts, with a view to securing the best available and most economical sites and quarters for the stations, were made, and special investigations were directed in this regard, to the locality factors of infant mortality, child population, prevailing nationality, intelligence of parents, housing, existence of child-caring agencies, as well as other city-owned or rented places in the district.

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Education exhibits at the stations included panels on pre-natal care, colored panels on motherhood, panels on child-care, placards on clean milk, and a large number of educational placards, posters, leaflets and circulars, furnished by the Bureau of Public Health Education, as well as food bulletins and exhibits, and, literature on milk and other foods, employment, Americanization, etc. Not only were these exhibits placed within the stations, but the windows of the stations were used for advertising purposes, so to say, so that those "who ran by the stations, may read."

During 1919, there was a slight increase in the infant mortality rate from diarrhoeal diseases, the rate for 1919 being 15.9, and for 1918 14.7. Compared, however, with former years, the rate for 1919 is most gratifying, the rates for more recent years being as follows:

Infant Mortality Rates, Diarrhoeal Diseases, City of New York.

Year	Rate
1917	19.1
1916	17.7
1915	22.5
1914	21.0
1913	22.5
1912	25.0

This increase during 1919 led the bureau to make a survey in order to determine the relation between the character of the feeding and infant deaths from diarrhoeal diseases. It has been the observation of the bureau for a great many years, that infants breast-bed exclusively were less likely to succumb to diarrhoeal diseases than those artificially fed, and the result of the study corroborated this long observation. All in all, the history of 1,065 infants, who died during the months of May, June, July and August, 1919, in which reliable information could be secured as to the character of the feeding before death, were studied and tabulated, with the following results:

Character of Feeding.	No. of Cases.	Percentage of Deaths.
Breast-fed only	178	16.7
Breast and bottle	154	14.4
Breast and other	67	6.3
Breast and loose	11	1.0
Bottle only	286	26.9
Bottle and other	221	20.7
Bottle and loose	10	1.0
Loose	22	2.1
Loose and other	25	2.4
Other	91	8.5

In order to determine the possible relationship between the increasing prices of milk during the year, and the health and nutrition of infants and children, as regards the quantity and quality of milk used, the substitution of less desirable articles of food for feeding, the ability of parents to purchase milk at the advanced prices, and the classes and nationalities most affected, two surveys were made.

The first survey was conducted by the nurses attached to the Bureaus of Child Hygiene and Preventable Diseases; areas representative of congested districts in the City were chosen in each borough. The results of the first survey follow:

The first survey was ordered by the Commissioner of Health, Dr. Royal S. Copeland, to aid the Special Committee on the Price of Milk, appointed by Governor

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Smith, in procuring first hand and up-to-date facts as to the quantity and quality of milk used in the city, its increase in price, the substitution of other articles of food for it in the feeding of young children, the ability of parents to purchase milk at the advanced prices, the classes of the community most affected, and above all the effects of the deprivation of necessary food upon the health of the children of the city.

The survey was based on an investigation made by the public health nurses attached to the Bureaus of Child Hygiene and Preventable Diseases, and areas, representative of the congested districts of the city, were chosen in each borough that would reflect the actual conditions affecting the various phases of the problem.

The nurses engaged in this work were instructed to visit individually each family in the area assigned to them, to interview the mother of the family, and to note the physical condition of the children.

There were 11,007 families visited and reported on, divided as follows:

Borough of Manhattan	4,600
Borough of The Bronx	2,056
Borough of Brooklyn	3,395
Borough of Queens	467
Borough of Richmond	489
Total families visited	11,007

All children between the ages of one and seven years were examined, their physical condition and the nativity of the mother entered on the blank form prepared for that purpose. In addition to this the following items called for on the blank forms were gathered and tabulated as shown in the accompanying tables; number of cups of milk used, number of cups of coffee, tea, and cocoa entering into the diet; lessened quantity of whole milk used, expressed in quarts; increased quantity of condensed milk used, expressed in cans; number of families in which children were deprived of milk by reason of increased cost of same; number of children suffering from deprivation of milk; effect of lessened use of milk upon the physical condition of the children, as shown in number of children suffering from malnutrition, anaemia, underweight, and other physical defects; quantity and nature of substitutes used, and increased price of milk, arranged by grades, in September, 1919, as compared with September, 1916, from which latter date the price of milk advanced.

The number of children in the 11,007 families visited was 19,037, arranged according to age groups as follows:

1-2 years	3,052
2-3 years	3,647
3-4 years	3,579
4-5 years	3,556
5-7 years	5,203

The fewer number of children at one year of age, as compared with the succeeding ages, is entirely at variance with the normal experience as shown in census enumerations, and previous tabulations, and is contrary to calculations, estimates, etc., made in previous years. This decreased number of children of one year of age is explainable by the decreased birth rate of the years 1917 and 1918, as a result of the entrance of this country into the war—the decreased marriage rate of 1917 affecting the birth rate of 1918. This reduction in the number of children under one year of age, as compared with those two years of age, was found to have occurred in all the boroughs of the city, with the exception of the Borough of The Bronx.

There were 40,573 *cups* of milk used daily by 19,037 children, or two cups and one ounce of milk for each child *daily*, an amount totally inadequate at each of the individual ages, but markedly so at the ages of one and two years; milk is the blood

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of children at these ages, and whosoever deprives them of this sustenance for financial or other reasons should feel the full hand of the law, if such can be placed upon him, and, if not, the execration of his fellow men.

We find that children of American mothers received daily two cups and three ounces of milk; of Italian mothers one cup and six ounces; of Russian mothers, two cups and four ounces; of Austro-Hungarian mothers, two cups and three ounces; of German and Irish mothers, two cups and six ounces.

Viewed from the point of individual boroughs the amount of milk per capita was approximately the same.

The number of cups of coffee, given daily to the children in the 11,007 families, was 12,439; and of tea, 7,438 cups. It is evident that approximately two cups of tea or coffee are given, on the average, to each child. When it is understood that coffee and tea are stimulants, without any appreciable value as nutriments, it is realized that both should be tabooed in child life, and the conclusion is irresistible that malnutrition and all the evils attendant thereto must prevail among children fed on such material.

The tables show that in 10,793 families substitutes in the form of tea, coffee, cocoa, cereals, and other drinks were used, that is to say, in over 98 per cent. of the homes investigated, this dangerous practice was in vogue. Some mothers through ignorance of food values, adopt this baneful practice, but many mothers who know better are compelled by reason of the high cost of milk to seek these deleterious substitutes.

In 7,219 instances, less milk was bought, according to statements of the mother; more condensed milk was used in 1,017 families. Mothers, to the number of 5,775, claimed that children were deprived of milk by reason of high cost of the same, and 4,053 children were found to be using less milk.

The examination by the nurses showed the following prevalence of nutritional disorders among the children. This is the most interesting and important disclosure of the survey. There were 1,294 children found suffering from definite malnutrition; 993 children from anaemia; 785 children were found to be under normal weight; 608 children suffered from other disorders; and 3,648 were found to be undernourished.

In 1916, there were bought daily 1,028 quarts of Grade "A" milk, bottled, at an average price of 13 cents, while in 1919 there were only 515 quarts bought daily at a price of 18.6 cents per quart—that is, the amount of this grade of milk purchased *decreased* fifty per cent., the price increasing 43 per cent.

Grade "A" loose, bought in rare instances, was sold in 1916 at 9 cents and in 1919 at 18 cents, an increase of 100 per cent., the amount used decreasing only slightly. Grade "B," bottled, was paid for in 1916 at a price of 10.8 cents, the amount in daily use being 1,100 quarts, as compared with a price of 16.5 cents and a daily amount of 801 quarts, the increase in price being 50 per cent. and the *decrease* in amount 27 per cent. Grade "B" loose could be had, in 1916, at 8.9 cents per quart, at which price 2,045 quarts were bought daily, as compared with a price of 12.3 cents and an amount of 2,534 quarts daily, an increase in price of 38 per cent., and an *increase* in daily amount of 24 per cent. The price of condensed milk rose from 10.4 cents, in 1916, to 18.5 cents, in 1919, an increase of 78 per cent., the amount used (relatively small) doubling in 1919.

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DEPARTMENT OF HEALTH—CITY OF NEW YORK

BUREAU OF CHILD HYGIENE — BUREAU OF PREVENTABLE DISEASES

NUTRITION SURVEY—CHILDREN UNDER SIX YEARS OF AGE

FAMILY HISTORY SHEET

Character of Neighborhood—Good—Fair—Poor

Borough _____ Street _____ Number of House _____

Number of Children in Family	Age	Sex	Color	Nativity of Mother	Amount of Milk Consumed Daily		Amount of Tea or Coffee		Apparent Social and Economic Condition of Family			Is Child Undernourished		Degree of Nutrition				Signs of Malnutrition	Cause of Malnutrition	Apparent Reason for Insufficient Supply of Milk
					Cups	Glasses	Cups	Glasses	Good	Fair	Poor	(Yes)	(No)	1	2	3	4			
1																				
2																				
3																				
4																				
5																				
6																				
7																				

Date _____ (Signed) _____ Inspector

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The second survey was somewhat along similar lines to the first, except that it embraced a younger age group, namely, children under six years of age, and entered into the apparent social and economic condition of the family as well as the degree of nutrition and other factors; a copy of the form used in this survey is hereto affixed.

General Co-operation in the Work.

Conditions following the war, and the unstable economic conditions, resulted in a more interested co-operation from many sources, all of which resulted in bringing much comfort and material relief to many needy and deserving families. This co-operation included, among the many, the Mayor's Committee of Women on National Defense, allied city departments, the Mayor's Ice Committee, the Women's Auxiliary of the Baby Health Stations, charitable, philanthropic and social service agencies, hospitals, St. John's Guild, Salvation Army, Red Cross, Young Women's Christian Association, Christ Child's Society, After-Care Circle, the Wholesale Ice Company, Herald Ice Fund, newspapers in English and foreign languages, Babies' Welfare Association, Teachers' College, Pratt Institute, New York Child Welfare Committee, maternity centres, Red Stocking Committee of Brooklyn, Social Service Exchange, neighborhood associations, Elks, guilds, theatres, etc.

As the result of the establishment by the Mayor of a large number of ice distributing stations in the various boroughs, many needy families were enabled to secure ice free of cost. This co-operation, in addition to the usual amount of ice distributed by the Wholesale Ice Company, and the Herald Ice Fund, through the Babies' Welfare Association, did much to assist in the control of infant life. The free excursions during the summer, organized by the Mayor's Committee of Women on National Defense, provided for daily excursions for a long time for mothers and babies of the poor.

The Clover Farms Company, the milk distributing concern for the Baby Health Stations, co-operated in several ways, particularly by their willingness to make official certain rules and regulations suggested by the Bureau, whereby the dispensers of milk at the stations would sell the milk with a minimum amount of confusion and misunderstanding, and whereby the drivers would exercise greater care in the delivery of milk, and in placing the same in refrigerators at the stations. These rules and regulations were printed by the Clover Farms Company and posted in the various stations of the Greater City.

In endeavoring to popularize the use of milk as a food for infants and children and to increase its family consumption, the Bureau co-operated with the Children's Milk Week Committee. This Milk Week was celebrated from April 21 to April 27, 1919, at the 71st Regiment Armory, and the Bureau took advantage of this opportunity to emphasize the need and importance of proper nutrition and other care in infancy and early childhood. With this object in view, a baby and child contest was conducted in all of the boroughs of the Greater City. Eighty-five centres, comprising all the Baby Health Stations of the department and many Baby Health Stations of allied child-caring agencies were included in this contest. Unlike other contests, this was not a mere baby show, but included children of pre-school age. Special score cards were prepared, one for children under two years of age, and one for children from two to six years of age, and physical examinations were made of the better babies at each of these centres, in order to establish the best at each one of these centres. The primary examinations were conducted by the medical inspectors of the Bureau; the various boroughs were zoned into districts, and as a result of a process of elimination, the best district and borough baby, and the best district and borough pre-school age child, and finally the best city baby and the best city pre-school age child were decided upon. The final determination of the best borough

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and city baby and pre-school age children, was made by a special advisory committee, consisting of prominent pediatricians of the Greater City. Provision was made for the distribution of money prizes and medals. The best city baby and the best city pre-school age child, received the Mayor's gold medal, a letter of congratulation from the Commissioner of Health, and a fifty-dollar victory bond. Each best borough baby and best borough pre-school age child was given a silver medal, a twenty-dollar gold piece and a letter of congratulation, signed by the Commissioner of Health, and each of the twenty best district babies and best pre-school age children, was given a five-dollar gold piece, a silver medal and a letter signed by the Commissioner, and finally, each of the best Baby Health Station babies and pre-school age children was given a medal and a letter signed by the Commissioner of Health. The bureau had a large booth at the exhibit, at which babies and children were weighed and given small tags, on one side of which was noted the weight and height of the baby or child, together with the normal weight and height for its age; and on the reverse side there was a statement emphasizing the value of milk as a food. Nurses and doctors were in attendance daily. The exhibit contained a large number of photographs, pictures and a large amount of educational literature was distributed.

The distribution of prizes to the city, borough and district winners took place at the exhibit on different days of the week, and each day was known as the respective borough day. The presentation of the medals, bonds and gold pieces was made by the Commissioner of Health.

The value of Baby Health Stations as educational factors in the Greater City was further emphasized by the establishment of several additional Baby Health Stations maintained by allied child-caring agencies, namely, The Greenwich House, The Master School, and the Henry Street Nurses' Settlement. Strangely enough, some of these stations were opened in discarded saloons and thus resulted in paraphrasing a rhyme that was popular in the town at the time,

Hush little bar-room, don't you cry,
You will be a baby health station by and by.

The educational advantages of Baby Health Stations was further emphasized in the Borough of Queens, where, because of a limited number of stations and the large distances that it is necessary to travel, five temporary Baby Health Stations were established during the summer months, at public schools and at the branch offices of the Health Department. These temporary Baby Health Stations were supported this year, as in former years, largely through voluntary contributions of mothers' clubs associated with the schools, and arrangements were made with a local concern to supply a high grade of milk for infant and child-feeding, at a cost below the prevailing market price.

All of the aforementioned shows that child care is no longer to be considered an individual problem nor the problem of a municipal health department alone. It is now a community problem or a close business partnership of all agencies and individuals interested in child welfare. Such results as are being attained in this City can come about only through a well-organized, co-ordinated and correlated effort on the part of all agencies interested in infants and children, with the health department acting as a clearing house. The control of infant and child morbidity and mortality is more of a socio-economic than a medical problem. Naturally, social service work has always been with us, and probably always will be. It has taken some time to arrive, but, it is here, and will never in all likelihood be relegated to the rear. Its importance and significance during 1919 was more evident than ever, and every available source and channel for securing relief has been searched and used by the medical and nursing staff of this bureau, in their effort to secure as much material aid, relief and comfort, as was necessary for the needy and deserving families which came under their jurisdiction.

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While individual instruction is the aim of the Baby Health Station service, it has been found expedient at times, to hold various classes for mothers, where general instruction in preventive health measures can be given. This year, as in former years, classes on the prevention or respiratory diseases, cooking classes, and sewing classes have been held.

The fact that respiratory diseases have assumed second place in the infant mortality statistics, has demonstrated the need of instruction in preventive measures. While it is true that the prevalence of respiratory diseases of infancy was unusually low in the early part of the year, nevertheless, it was considered advisable to continue these classes. This program justified itself because toward the latter part of the year an increase in respiratory diseases took place. Instruction was given on all factors which were likely to increase respiratory diseases, such as the importance of ventilation, the dangers of overcrowding, of coughing, sneezing, spitting, kissing, etc.; the use of separate eating utensils, towels, tooth brushes, etc.; the importance of oral and nasal hygiene, the care of the teeth, the dangers of hand to mouth infection, the isolation of all children and adults with coughs and colds, etc.

Cooking classes, by the nurses or by trained dietitians from various co-operative agencies, such as Teachers' College, Pratt Institute, the Association for Improving the Condition of the Poor, were held regularly, in order to educate mothers in the proper and most economical methods of purchase, preparation, care and palatability of food. The economic conditions of the day, rendered it necessary and important to show the tenement population how to spend their money most advantageously and profitably. These classes laid particular stress upon the fact that milk was a food and not a beverage, that it has a high nutritive value and that there were many ways in which it could be prepared to suit the taste as well as the food habits of the different nationalities.

Sewing classes were conducted mainly for expectant mothers, and demonstration on how to prepare at a small price articles for the new arrival and for the confinement, were held at regular intervals. These classes not only proved of material advantage to the mothers, but the gatherings afforded them a certain amount of social intercourse which relieved the monotony of their daily life, and gave them a healthier mental attitude, which is so essential during pregnancy. In many instances, the material used at these classes were furnished free of cost, by one or another of the co-operative agencies, or by private individuals, frequently through the efforts of the nurse in charge, so that a decided saving for many mothers was effected.

Classes in corrective exercises were also held through the courtesy of the Peoples' University Extension Society, this organization furnishing an instructor to several of the stations. These classes were open to all the older children of the neighborhood, who suffered from muscular relaxation or faulty posture and carriage, resulting in round shoulders, spinal curvature or other orthopedic defects. These classes were all well attended, some of the members having been in attendance for several years past.

Baby Health Stations as Centres for Other Departmental and Local Social Service Activities—Other departmental and local activities have centered around the Baby Health Stations, this year as in other years. They have come to be recognized as community or neighborhood centres, to which most of the inhabitants of the vicinity come for advice and instruction, that relate to the family as a unit. In the early part of the year they were used for the sale of eggs, at a price below that of open market, the eggs being delivered by the Department of Public Markets, the same being conducted by the nurses of the stations, and open to all who desired to purchase. While this sale was surrounded with numerous difficulties, annoyances and irregularities, and while it interfered with the regular station service and routine, it served a purpose, by placing in the hands of the needy public, a valuable article of diet at a reasonable price.

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Vaccinations have been performed at the stations the year round. Midwives, and mothers' meetings of various kinds have been held; Little Mothers' Leagues have met there at regular intervals; groups of high school girls have been given practical instruction in the care of the baby, and food preparation. Various child-caring, social service, philanthropic, and other agencies, as well as maternity centres, have been afforded desk room. Baby Health Station and social workers, doctors, nurses and other workers, from all parts of the world, have been instructed in the station activities and service. Local baby improvement contests have been held, and every facility has been offered the various municipal, state and National representatives, in furthering work of all kinds, which makes for the health and well-being of the family. In a word, all efforts for unifying the care of infants and children have been grouped and developed around the stations.

That the work performed at the Baby Health Stations, is recognized to be of a standard worthy of emulation, is exemplified by the fact that visitors from all parts of the world have come to them in order to study their methods. It is no exaggeration to say that there was scarcely a progressive community or country that did not send some representative to the Baby Health Stations during the year. Thus we find representatives from Poland, Australia, Japan, England, France, Havana, China, Canada, Texas, Washington, California, Kentucky, Oklahoma, Ohio, Michigan, Pennsylvania, Jersey, etc., etc.

Little Mothers' Leagues.

The Little Mothers' Leagues, which are organizations composed of school girls twelve years of age and over, have been part of the bureau organization for over ten years, and have been established and conducted in many of the public and a few of the parochial schools. As such, they are largely summer month institutions. The need for conducting these leagues the year round has long been felt by the bureau, and such organization has been effected at the baby health stations, and many of them have had a Little Mothers' League for the past several years.

The school leagues, in many cases, meet at the stations during the summer and then become incorporated with the permanent Baby Health Station leagues. During the year thousands of school girls come under the educational influence of inspectors and nurses of the bureau, through these leagues, and as a result thereof, not only carry daily lessons of child care, hygiene and sanitation into the homes, but take better care of their baby sisters and brothers, to say nothing of becoming better prepared for the exacting duties of motherhood.

Many of these leagues have formed cooking classes, in addition to their regular program, and, as in the case of cooking classes held for their mothers, the members have been taught by the nurses of the bureau and by expert dietitians from allied co-operative agencies, in the proper purchase, preparation, care, nutritive value, palatability, etc., of various food articles. They have served also as a wedge for the furtherance of the Americanization program of the National Government, and have proved gratifyingly responsive in work relative to after-war needs.

These leagues organized for the most part in the poorer sections of the city, where the need for help by mothers seems most urgent, naturally consist mostly of children of foreign-born parentage. The membership of most of the leagues consists of children whose parents have been born in many of the foreign countries. During the year sufficient interest was aroused in one of the Baby Health Stations near the Chinese section of the city to organize a league consisting of Chinese children, who responded most willingly and most interestingly to the instruction given by the nurse-in-charge.

The membership of the Little Mothers' Leagues of the public and parochial schools, and of the Baby Health Stations, totals about fifteen thousand (15,000) annually.

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With these leagues in existence for over ten years, it can readily be appreciated what a potent force this organization has had over the control of infant mortality in this city. These girls are very responsive to instruction and have acted as missionaries of education, not only for their own family, but for many of the families in the neighborhood. And, furthermore, they not only carry this education into the homes, but are sufficiently interested in the practical side of their work to gather funds through their own resources and to apply the same to the needs of some worthy baby or babies, particularly for the purchase of milk. It is no exaggeration to say that a large part of the reduction in infant mortality, which has taken place in the city during recent years, is due to the accumulative education of the "Little Mothers" of the Greater City.

District or Home Visiting Control of Infant Mortality by a Corps of Field Nurses.

During the months of July and August, and part of September, the supervision of infant life is supplemented by the assignment of an augmented force of nurses from the Division of School Medical Inspection, in addition to the regular work conducted through the baby health stations. During this heated period, school nurses are assigned to special districts of the city, in which analysis has shown either a high infant mortality rate or a large infant population. Each nurse is held responsible for the enrollment, supervision, care and follow-up of 150 infants in her respective district and in the event of removal, death or refusal to accept service, she is held responsible for making up the original complement of 150 by a canvass of the neighborhood.

Visits are made to these infants according to the needs of the situation, to well babies at least once every week or ten days, and to sick, delicate or frail infants, as frequently as necessary. These "district nurses," as they are called, make their headquarters in most cases at adjoining Baby Health Stations, and conferences are held daily with the medical inspectors, who visit the homes of sick and sub-normal infants, and prescribe all necessary treatment and advice for cases of gastro-intestinal disorders or diseases of nutrition. First-aid or emergent treatment is given in all cases ill with other diseases, and then every effort made to see that the baby receives subsequent care at the hands of private physicians, hospitals or dispensaries.

The volume of work performed in this direction, during 1919, was somewhat lower than in former years, due to the fact that provision was only made in the 1919 budget for the assignment of 87 months' of temporary nursing service, as against 285 months in former years. This circumstance necessitated the assignment of many school nurses to the Baby Health Stations to fill in the vacancies of the regular Baby Health Station nurses, whereas in former years this work was undertaken by the nurses temporarily assigned during the summer months.

At the expiration of the summer the babies under district supervision were referred by card to the neighboring Baby Health Station for a continuance course of advice and the mothers were urged to attend regularly. Unfortunately, only a very small per cent. of these mothers—6 per cent.—subsequently took advantage of the station opportunity. The small per cent. of mothers, who, during the summer receive advice and instruction from the district nurses, and subsequently enroll their babies at the station, has become common observation for many years. Irrespective of how many Baby Health Stations are maintained by the Department, there will always be a large number of mothers who will refuse to bring their babies to these centres, either because of indifference, neglect, or carelessness, and who cannot be reached through the stations because of a limited working force; and it is sadly true that very often babies who need care most never reach the station because of this indifference or neglect on the part of the mother. A combination, therefore, of Baby

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Health Station service for the year round, and home visits during the summer months, has proved of distinct usefulness. Such babies found during the summer, who are frail, delicate, or poorly nourished, are followed up by the Baby Health Station nurse, whether or not the mother enrolls the baby at the health station.

Infant mortality control during the summer months, through home or "district visits," has been conducted by the bureau since 1911. The number of babies supervised in the homes, during the summer months, by this corps of nurses, ranged between fourteen thousand and sixteen thousand, from 1911-1919 inclusive. The number of babies under one year of age so supervised during these years was 156,567. It is evident that this method of procedure, which is preventive rather than corrective, is no small contribution to the control of infant mortality in this city.

Physical Examination of Children of Pre-School Age.

For many years the bureau has recognized that there existed a gap in its administration of child hygiene activities, between the baby health station child and the school child. This gap is the proper supervision of children of pre-school age, 2 to 6 years. The pre-school age is one of the most neglected periods of childhood. Ample provision has been made for the control of infant mortality and for the supervision of the school child, and commendable results have been accomplished in both directions. The pre-natal and the pre-school age periods are the two weak links in the chain forged about the control of child life. The pre-natal period bears the same relation to the infant that the pre-school age bears to the school child. Just as the best time to take care of the health of an infant is before it is born, just so the best time to take care of the health of the school child is before it enters school, rather than after. With the neglect of either the pre-natal period or the pre-school age, the continuity of successful control of child life will be interrupted.

The Baby Health Stations, established and maintained primarily for the care and feeding of babies under two years of age, have not lent themselves under the present system of organization to any extended supervision of children of the pre-school age, for several reasons, namely—because of the increased volume and scope of infant and early childhood care, necessitating a corresponding increase of time and energy, on the part of the limited medical and nursing force; because mothers seem to have all they can do to look after the baby or babies that are brought to the stations, without the added burden of bringing children of the pre-school age to these centres; and because of the insufficient force of medical inspectors to conduct this work after the regular baby health station hours. While the bureau recognizes the importance of this work, comparatively few examinations were made at the stations during 1919 Sufficient data, however, has been compiled from a study of the examinations made in recent years to justify the recommendation that this type of work should be extended by the municipality. The percentage of mal-nutrition among children of the pre-school age is larger as a rule than that among children of the public schools, and other physical defects are quite as common, and in some instances more so. The studies of recent years have indicated the extreme importance of these examinations and the influence which proper correction of physical defects at this age period would have upon the educable capacity and school progress of the child. Physical examination and follow-up work of children of the pre-school age is one of the most pressing public health problems of the present, and one of enormous magnitude, when it is remembered that the estimated population in the City of New York of children from 2 to 6 years of age is almost 500,000, and that this is about one-half of the estimated school population. When it is remembered, furthermore, that the entire working medical force of the Division of School Medical Inspection examines approximately 300,000 school children annually, it is easily appreciated what a large working medical

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force would be necessary in order to make any definite impression upon the status of children of the pre-school age. In fact, the problem is so big that it is one for the community to undertake, rather than for the Health Department alone, and, if this problem is ever to be solved, ways and means for these examinations at various centers, such as schools, hospitals, dispensaries, settlements, guilds, clinics, day nurseries, baby health stations, etc., will have to be devised, or the public will have to be educated up to the necessity of having these children examined periodically by private physicians.

To sum up, then, while the volume of work performed was slightly below that of last year, essentially because of conditions associated with the war, diversion of the field force because of influenza, special surveys and other studies and a social unrest, the character of the work was maintained at a high standard, there was a betterment on the part of the employees in the general condition and scope of the various activities, a better, more sympathetic and more whole-hearted degree of co-operation on the part of allied agencies, a more earnest view of the clientele, as to the objects and purposes of the stations, and a fine spirit of willingness, earnestness and loyalty on the part of the employees, during the trying days of 1919.

SUMMARY OF VITAL STATISTICS FOR THE MONTH OF JUNE, 1920.

The health of the city during the month of June, 1920, as reflected in the mortality statistics for the month, has been remarkably good, there having been 4,863 deaths and a death rate of 9.64 per 1,000 of the population reported during the month, as compared with 4,861 deaths and a rate of 9.85 in June, 1919, an increase in the absolute number of deaths of 2 and a decrease in the rate of 0.21 of a point, which is equivalent to a relative decrease of 25 deaths. The rate of 9.64 is the second lowest monthly death rate on record, the lowest rate having been that of September, 1919, in which it went down to 9.03.

The mortality during the month was noteworthy as to four groups of diseases:

1. Contagious diseases of childhood in which the mortality of measles and whooping cough was considerably above the normal, there having been 89 deaths reported from these two causes, as compared with 24 deaths in the corresponding month of 1919, thus having a material effect upon the infant mortality rate—increasing it to the extent of 4 points per 1,000 children born, as compared with the experience of June of last year, the infant death rate being respectively 64, as compared with 60, based on the number of births reported.

2. The second noteworthy group shows, on the other hand, a much decreased mortality and that is the group of tuberculous diseases, there having been 580 deaths reported from all forms of tuberculosis during the month just closed, as compared with 698 deaths in June, 1919, a decrease of 118 deaths. In passing it may be noted that this decrease in the mortality from tuberculous diseases has prevailed during each month of this year and to a corresponding extent as in the month of June. In the absence of any official procedure or additional discovery as to curative remedies, the cause thereof may be justly ascribed to the improved financial conditions enjoyed by all classes of labor as well as to other economic factors, such as the shortening hours of toil and the greater opportunity for recreation.

3. The third group of diseases showing a noteworthy change was an increase in the number of deaths from organic heart and kidney diseases, there having been 1,164 deaths reported during the month, as compared with 1,105 deaths in June, 1919, an increase of 59 deaths.

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4. The fourth group of cases comprised the deaths from street accidents, especially deaths caused by being run over by automobiles; 96 deaths were attributed to this cause during the month, as compared with 56 during June, 1919, an increase of 40 deaths. More restrictive legislation is required as to the issuance of permits to drive automobiles through the city, and above all, more severe penalties should be inflicted upon transgressors.

In passing it might be noted that there were 5 deaths reported from acute alcoholism, as compared with 16 deaths in June of last year, thus evidencing that prohibition is not being enforced thoroughly in the city.

Viewed from the point of age grouping, there were 119 more deaths of infants under one year of age, 10 more deaths between 1 and 2 years, 60 more deaths between 5 and 15, and 39 more deaths at 65 years of age and over.

At all other age groups, the mortality was lower, as follows:

Between 2 and 5 years, 26 fewer deaths were reported;
Between 15 and 25 years, 21 fewer deaths were reported;
Between 25 and 45 years, 146 fewer deaths were reported;
Between 45 and 65 years, 33 fewer deaths were reported.

There were 132 deaths of non-residents of the city reported, which, if deducted from the total deaths from all causes, would give a death rate for the city of 9.38 per 1,000 of the estimated population.

During the month there were 9,368 marriages reported, as compared with 6,376 in June of 1919—an increase of 2,992 marriages; 1,810 births were reported, as compared with 1,098—an increase of 1,012.

The war, which affected adversely the marriage and the birth rates, being ended, the natural swing in these matters is towards a much higher marriage and birth rate, which we are now experiencing.

POPULATION, MARRIAGES, BIRTHS AND DEATHS, JUNE, 1920.

Boroughs.	Population U. S. Census April 15, 1910.	Estimated Population July 1, 1920.	Certificates Received and Tabulated.			Rate per 1,000 Based on Department Estimate.			Corrected Death Rate. **	Corr'td Death Rate Correspon'g Month 1919.
			Marriages	B'ths	* D'ths	Marriages.	B'ths.	D'ths.		
Manhattan	2,331,542	2,829,239	5,501	5,148	2,118	23.67	22.15	9.11	9.06	9.67
The Bronx.	430,980	669,233	889	1,325	609	16.17	24.10	11.08	10.37	10.16
Brooklyn..	1,634,351	2,117,908	2.494	4,316	1,611	14.34	24.81	9.26	9.68	9.69
Queens....	284,041	419,506	359	774	364	10.42	22.46	10.56	10.97	10.67
Richmond.	85,969	105,559	125	247	161	14.42	28.49	18.57	14.42	12.92
N. Y. City.	4,766,883	6,141,445	9,368	11,810	4,863	18.58	23.42	9.64	.....	9.85

*Includes 132 deaths of non-residents of the city, which, if deducted, would give a death rate for the city of 9.38 per 1,000.

**Corrected by redistributing deaths according to borough of residence.

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REGISTERED MORTALITY FROM PRINCIPAL CAUSES.

JUNE, 1920.

	Manhattan.		The Bronx.		Brooklyn.		Queens.		Richmond.		City of New York.	
	June.		June.		June.		June.		June.		June.	
	1920	1919	1920	1919	1920	1919	1920	1919	1920	1919	1920	1919
Total, all causes	2106	2209	570	539	1684	1647	378	356	125	110	4863	4861
1. Typhoid Fever	....	1	...	2	1	3	....	...	...	...	1	6
3. Malarial Fever	....	....	...	...	....	1	...	...	...	...	....	1
4. Typhus Fever	....	....	...	...	....	....	...	...	...	...	....	....
5. Measles	19	11	3	...	20	5	1	1	2	...	45	17
6. Scarlet Fever	11	12	...	2	3	1	...	...	2	...	16	15
7. Whooping Cough	19	5	2	1	18	....	4	1	1	...	44	7
8. Diphtheria and Croup	24	43	9	12	31	30	10	7	5	1	79	93
9. Influenza	8	15	7	4	9	17	...	2	...	...	24	38
10. Cholera Nostras	....	....	...	...	....	....	...	...	...	...	....	...
11. Poliomyelitis	1	1	...	...	....	1	...	...	...	...	1	2
12. Other Epidemic Diseases	19	13	...	4	4	9	1	2	2	...	26	28
13. Tuberculosis Pulmonalis	236	311	69	84	140	168	29	37	8	8	482	608
14. Tuberculous Meningitis	23	24	4	1	20	15	3	3	...	1	50	44
15. Other forms of Tuberculosis	15	21	5	4	16	20	4	1	...	...	40	46
16. Cancer, Malignant Tumor	197	177	50	54	128	143	29	28	9	10	413	412
17. Simple Meningitis	9	14	1	...	7	10	1	2	..	1	18	27
Of which												
17a. Cerebro Spinal Meningitis	5	7	1	...	2	7	...	2	...	...	8	16
18. Apoplexy and Softening of the Brain	25	28	3	2	13	21	1	4	1	1	43	56
19. Organic Heart Diseases	306	326	104	88	297	281	76	57	16	9	799	761
20. Acute Bronchitis	19	6	2	1	13	13	1	...	2	...	37	20
21. Chronic Bronchitis	2	3	1	1	3	2	...	...	...	...	6	6
22. Pneumonia (exc. Broncho Pneumonia)	92	77	16	21	61	76	19	7	4	7	192	188
22a. Broncho Pneumonia	96	77	25	15	65	54	10	9	1	5	197	163
23. Other Respiratory Diseases	17	11	6	5	10	14	2	...	...	...	35	30
24. Diseases of the Stomach (Cancer excepted)	13	12	5	3	6	10	2	3	2	1	28	29
25. Diarrhoeal Diseases (under 5 years)	64	56	10	7	69	45	7	29	3	4	153	141
26. Appendicitis Typhlitis	22	26	13	5	18	21	8	8	2	3	63	62
27. Hernia, Intest'l Obstruction	13	21	8	4	21	16	4	4	1	2	47	48
28. Cirrhosis of Liver	17	15	1	2	12	16	1	2	...	...	31	35
29. Bright's Disease and Nephritis	125	123	43	30	158	153	31	26	8	12	365	344
30. Diseases of Women (not Cancer)	16	7	4	3	10	20	...	2	...	...	30	32
31. Puerperal Septicaemia	4	6	2	...	10	4	1	2	...	...	17	12
32. Other Puerperal Diseases	24	18	2	7	16	22	3	6	1	...	46	53
33. Congenital Debility and Malformations	106	135	36	42	100	71	20	19	15	8	277	275
34. Old Age	7	8	2	1	2	3	2	2	3	2	16	16
35. Violent Deaths	164	181	32	39	105	102	26	19	11	15	338	356
a. Sunstroke	....	2	1	2	2	1	1	...	...	...	4	5
b. Other Accidents	152	164	31	36	101	100	24	17	11	13	319	330
c. Homicide	12	15	...	1	2	1	1	2	...	2	15	21
36. Suicide	21	27	6	10	24	22	7	7	1	...	59	66
37. All other causes	367	393	96	81	272	257	75	64	25	20	835	815
38. Ill-defined causes	5	5	3	1	2	1	...	2	...	...	10	9

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REGISTERED MORTALITY FROM ALL CAUSES AND CERTAIN INFECTIOUS DISEASES, BY WARDS, JUNE, 1920.

BOROUGH OF MANHATTAN.

Wards.	Area in Acres.	Population U.S. Census 1910.	Number of Persons to the Acre.	Typhoid Fever.	Smallpox.	Measles.	Scarlet Fever.	Diphtheria and Croup.	Pulmonary Tuberculosis.	Lobar Pneumonia.	Broncho-Pneumonia.	Diarrhoeal Diseases.	All Causes.	Deaths of Children Under 5 Years.
1	154.0	9,750	63.0	..	..	..	..	..	4	2	1	1	27	3
2	81.0	933	11.5	..	..	..	..	..	..	..	..	..	2	..
3	95.0	1,915	20.2	..	..	..	..	..	1	..	..	..	6	1
4	83.0	21,336	257.1	..	..	1	..	..	1	1	1	..	15	4
5	168.0	5,666	33.7	..	..	..	..	..	..	..	..	..	7	2
6	86.0	19,670	228.7	..	..	..	..	..	3	1	3	1	25	6
7	198.0	102,101	515.6	..	..	..	1	..	8	2	8	2	59	15
8	183.0	33,182	181.4	..	..	2	..	..	7	1	1	3	29	11
9	322.0	64,909	201.6	..	..	2	..	..	6	1	4	2	53	15
10	110.0	66,439	604.0	..	..	..	..	..	3	1	2	..	35	10
11	196.0	136,548	696.7	..	..	..	..	1	4	..	4	1	48	22
12	6,154.0	806,648	131.1	..	..	7	5	6	88	30	26	22	773	155
13	107.0	64,651	604.3	..	..	..	1	1	5	..	2	..	38	12
14	96.0	38,321	399.3	..	..	..	..	2	2	8	5	3	48	24
15	198.0	30,584	154.5	..	..	..	..	..	3	2	..	..	24	2
16	349.0	55,926	160.2	..	..	2	..	2	5	2	3	3	58	14
17	331.0	172,334	520.6	..	..	..	2	5	16	7	5	4	136	34
18	450.0	62,821	139.6	..	..	..	..	3	11	6	6	1	81	19
19	1,481.0	292,950	197.7	..	..	2	1	..	29	11	11	14	262	61
20	444.0	73,308	165.1	..	..	1	1	..	7	..	4	1	66	10
21	411.0	62,345	151.7	..	..	..	..	..	6	6	2	6	94	19
22	1,529.0	209,154	136.8	..	..	2	..	4	27	11	8	8	220	43
Total....	13,226.0	2,331,491	176.3	..	..	19	11	24	236	92	96	72	2106	482

BOROUGH OF BROOKLYN.

1	233.0	21,851	93.8	..	..	1	..	..	2	1	2	..	16	5
2	97.7	6,894	70.6	..	..	..	..	..	4	..	..	1	9	1
3	161.4	15,910	98.6	..	..	..	..	..	1	2	..	1	16	2
4	111.3	10,477	94.1	..	..	1	..	..	5	1	2	..	19	4
5	119.4	19,401	162.5	..	..	..	1	..	1	1	3	1	20	5
6	302.9	46,437	153.3	..	..	4	..	..	1	1	1	2	41	13
7	458.5	44,037	96.0	..	..	1	..	1	3	2	..	1	50	10
8	1,843.2	82,687	44.9	..	..	1	..	3	14	3	6	5	118	34
9	623.6	50,501	81.0	1	..	1	..	..	5	1	2	3	58	14
10	318.7	41,238	129.4	..	..	..	..	..	2	..	2	..	32	7
11	252.6	21,659	85.7	..	..	..	..	..	2	4	1	1	34	4
12	663.1	29,262	44.1	..	..	3	..	3	6	2	5	1	90	18
13	230.3	30,091	130.7	..	..	..	..	..	4	..	1	..	21	3
14	282.6	33,329	117.9	..	..	..	..	1	2	..	4	..	21	10
15	244.8	35,887	146.6	..	..	..	..	2	3	..	1	4	27	10
16	244.8	68,244	278.7	..	..	..	..	2	3	1	4	3	39	15
17	823.3	70,346	85.5	..	..	..	..	1	7	6	3	10	98	22
18	873.0	35,708	40.9	..	..	1	..	1	2	2	..	2	30	12
19	413.8	44,860	108.4	..	..	..	..	2	5	1	1	1	36	8
20	461.4	27,463	59.5	..	..	1	..	1	2	4	2	2	29	9
21	483.2	78,741	163.0	..	..	..	..	..	4	..	1	2	47	13
22	1,361.6	81,283	59.7	..	..	..	..	1	9	9	2	4	114	23
23	736 0	65,561	89.1	..	..	..	..	2	8	2	1	1	71	7
24	1,198.5	80,466	67.2	..	..	2	..	..	6	3	3	4	76	28
25	567.8	63,597	112.0	..	..	1	..	..	4	1	4	3	48	9
26	3,590.2	77,963	49.5	..	..	1	1	5	9	2	4	6	127	33
27	400.7	76,000	189.6	..	..	..	..	..	4	1	1	3	38	11
28	884.4	77,451	87.6	..	..	..	..	3	5	5	4	7	139	20
29	3,800.0	72,351	19.0	..	..	2	1	..	7	3	..	1	56	11
30	5,401.1	76,406	14.1	..	..	..	..	3	8	3	5	7	135	32
31	6,312.3	30,988	4.9	..	..	..	..	..	1	..	..	2	22	4
32	5,479.5	17,419	3.2	..	..	..	..	..	1	..	..	1	7	2
Total....	38,977.8	1,634,508	41.9	1	..	20	3	31	140	61	65	79	1,684	399

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BOROUGH OF THE BRONX.

Wards.	Area in Acres.	Population, U. S. Census 1910.	Number of Persons to the Acre.	Typhoid Fever.	Smallpox.	Measles.	Scarlet Fever.	Diphtheria and Croup.	Pulmonary Tuberculosis.	Lobar Pneumonia.	Broncho-Pneumonia.	Diarrhoeal Diseases.	All Causes.	Deaths of Children Under 5 Years.
23	4,267.0	268,880	63.0	..	..	3	..	6	35	10	11	8	286	62
24	22,255.8	162,062	7.3	..	..	..	..	3	34	6	14	5	284	49
Total.	26,522.8	430,942	16.2	..	..	3	..	9	69	16	25	13	570	111

BOROUGH OF QUEENS.

1	4,650.0	61,763	13.3	..	..	..	..	2	7	3	4	2	75	15
2	14,700.0	105,219	7.2	..	..	..	..	2	10	5	2	3	92	19
3	22,000.0	37,171	1.7	..	..	..	..	..	3	2	3	1	68	12
4	36,600.0	67,412	1.8	..	..	1	..	6	8	6	1	2	114	19
5	3,770.0	12,476	3.3	..	..	..	..	..	1	3	..	..	29	2
Total.	81,720.0	284,041	3.5	..	..	1	..	10	29	19	10	8	378	67

BOROUGH OF RICHMOND.

1	3,340.0	27,201	8.1	..	..	1	..	..	..	3	..	..	37	12
2	4,130.0	16,871	4.1	..	..	..	..	2	5	1	..	2	29	8
3	10,050.0	19,812	2.0	..	..	1	..	1	2	..	..	..	26	6
4	8,180.0	10,662	1.3	..	..	..	1	..	1	..	1	1	21	4
5	10,900.0	11,423	1.0	..	..	..	1	2	..	..	..	..	12	2
Total.	36,600.0	85,969	2.3	..	..	2	2	5	8	4	1	3	125	32

DEATHS ACCORDING TO AGE GROUPS, JUNE, 1920

Boroughs.	All Ages.	Under 1 Year.	1 Year and under 2.	Under 5 Years.	5-15 Years.	15-25 Years.	25-45 Years.	45-65 Years.	65 Years and over.	Colored.	Chinese.
Manhattan.	2,106	349	77	482	106	128	397	584	409	146	4
The Bronx..	570	81	13	111	32	34	118	152	123	4	..
Brooklyn...	1,684	262	66	399	107	93	299	440	346	51	4
Queens.....	378	45	10	67	23	24	62	117	85	9	..
Richmond..	125	26	3	32	7	6	20	25	35	4	..
City of N. Y	4,863	764	169	1,091	275	285	896	1,318	998	214	8

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INFECTIOUS DISEASES.

Number of Cases Reported in the City of New York, by Boroughs, During June, 1920, and June, 1919.

	Manhattan.		The Bronx.		Brooklyn.		Queens.		Richmond.		City.	
	June		June		June		June		June		June	
	1920	1919	1920	1919	1920	1919	1920	1919	1920	1919	1920	1919
Typhoid Fever	26	18	1	7	20	12	2	1	2	1	51	39
Typhus Fever	....	....	....	....	1	....	...	...	...	...	1	....
Malaria	7	1	1	1	....	1	...	...	...	...	8	3
Small Pox	....	1	....	....	....	....	...	...	...	...	....	1
Measles	595	401	135	50	783	99	226	41	72	13	1,811	604
Scarlet Fever	162	106	50	51	125	82	72	35	20	6	429	280
Whooping Cough	349	22	66	11	209	43	40	2	11	2	675	80
Diphtheria and Croup	580	553	139	229	358	376	150	111	19	25	1,246	1,294
Leprosy	....	....	....	....	....	....	...	...	...	...	....	....
Mumps	205	152	61	44	104	108	37	17	8	8	415	329
German Measles	87	44	23	5	47	11	7	...	11	1	175	61
Chicken Pox	322	399	101	98	209	244	35	42	13	3	680	786
Glanders	....	....	....	....	....	....	...	...	...	...	....	....
Anthrax	1	....	....	....	....	....	...	...	...	...	1	....
Rabies	....	....	....	....	....	....	...	...	...	...	....	....
Tetanus	....	....	....	....	1	1	...	...	...	...	1	1
Pellagra	....	....	....	....	....	....	...	...	...	...	....	....
Pulmonary Tuberculosis	678	656	115	176	425	311	81	98	26	19	1,325	1,260
Other Tuberculous Diseases	....	....	....	....	....	....	...	...	...	...	....	....
Syphilis	1,059	775	140	70	450	403	49	33	49	10	1,747	1,291
Gonorrhoea	137	149	31	21	126	142	19	7	3	2	316	321
Cerebro-Spinal Meningitis	6	13	3	1	2	7	...	2	...	1	11	24
Poliomyelitis	2	....	1	1	....	2	...	...	...	...	3	3
Hookworm	....	....	....	....	....	....	...	...	...	...	....	....
Trichinosis	....	....	....	....	....	....	...	...	...	...	....	....
Influenza	5	3	5	3	8	4	2	1	...	...	20	11
Pneumonias	297	37	65	14	185	37	58	6	14	4	619	98
Total	4,518	3,330	937	782	3,053	1,883	778	396	248	95	9,534	6,486

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MONTHLY METEOROLOGICAL SUMMARY.

JUNE, 1920

Date.	Temperature. (Degrees Fahrenheit.) Maximum.	Minimum.	Mean.	Departure of Mean from Normal.	Relative Humidity. (Per Cent.) 8 a.m.	Precipitation (Inches.) Rain.	Snow.	Wind. (Miles per hour.) Average Velocity.	Prevailing Direction.	Maximum Velocity and Direction.	Sunshine. Number of Hours.
T 1	80	58	69	+ 5	80	0	0	14.1	SW	28 S	13.5
W 2	84	62	73	+ 8	71	0	0	17.7	SW	34 SW	15.0
T 3	83	68	76	+11	74	†	0	16.6	SW	36 NW	11.9
F 4	69	52	60	— 6	38	.07	0	15.1	NE	26 E	6.6
S 5	57	50	54	—12	100	1.94	0	16.3	NE	28 E	0.3
S 6	66	50	58	— 8	81	.02	0	21.0	NW	43 NW	8.8
M 7	68	54	61	— 5	59	0	0	24.5	NW	46 NW	13.7
T 8	72	57	64	— 3	53	.11	0	8.5	N-SE	18 N	10.7
W 9	75	56	66	— 1	67	0	0	11.6	N	21 N	15.1
T 10	76	56	66	— 1	72	0	0	12.3	S	26 SW	15.1
F 11	90	62	76	+ 8	71	†	0	17.2	SW	35 W	14.6
S 12	79	65	72	+ 4	59	.03	0	14.8	S	30 NW	8.0
S 13	71	57	64	— 4	96	.84	0	11.4	NE	26 SE	5.4
M 14	83	60	72	+ 4	80	0	0	14.3	N	26 W	12.6
T 15	86	67	76	+ 8	61	T	0	17.8	SW	50 SW	13.0
W 16	79	68	74	+ 5	76	.02	0	16.0	W	28 W	5.7
T 17	71	56	64	— 5	98	.49	0	14.8	E	33 E	0
F 18	60	52	56	—13	80	.07	0	11.8	NE	25 NE	0.9
S 19	69	52	60	—10	77	0	0	7.8	S	17 N	8.4
S 20	69	55	62	— 8	73	T	0	11.9	SE	23 SE	8.5
M 21	75	53	64	— 6	99	.40	0	12.7	E	27 W	7.1
T 22	74	63	68	— 2	88	†	0	17.7	SW	37 W	13.6
W 23	74	60	67	— 3	78	†	0	11.0	W	21 W	8.8
T 24	77	60	68	— 3	63	1.34	0	9.2	S	44 NW	13.5
F 25	77	58	68	— 3	72	0	0	14.5	N	24 NE	13.3
S 26	82	63	72	+ 1	54	0	0	13.4	N	21 N	14.5
S 27	84	67	76	+ 5	61	0	0	10.6	S	24 S	14.7
M 28	84	64	74	+ 3	79	T	0	11.7	SW	20 SW	10.5
T 29	86	65	76	+ 4	76	.79	0	17.2	S	42 S	11.2
W 30	81	65	73	+ 1	91	.07	0	12.1	SW	26 S	6.8
.....	....	....	....	....	....	....	....	....	.....	.....	.....
Month	Mean 76.0	Mean 59.2	Mean 67.6	Blank	M'n 74	Total 6.19	Total 0.0	Mean 14.2	Prev'l'g SW	Blank	Total 301.8
Normal	77.2	61.1	68.5	Blank	74	3.26	0.0	9.9	NW	Blank	Possible 452.0

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CONTENTS: VIVISECTION.
THE MEDICAL UNIT OF A FACTORY.

MONTHLY BULLETIN
OF THE
DEPARTMENT of HEALTH
CITY OF NEW YORK

Public health is purchasable. Within natural limitations a community can determine its own death rate.

Published monthly by the Department of Health, City of New York, 505 Pearl St., New York, N. Y. Entered as Second-Class Matter October 16, 1917, at the Post Office at New York, N. Y. Under Act of March 3, 1879. Subscription 10 cents per annum.

ROYAL S. COPELAND, M. D., Commissioner of Health.

VOL. X. AUGUST, 1920. No. 8

VIVISECTION.

By S. DANA HUBBARD, M.D.

Acting Director Bureau of Public Health Education.

What is vivisection? A rather broad and general definition of vivisection—as understood and applied by laymen—is the dissection or cutting up of live animals in experimentation.

It is thought, too, by many that this is performed without anæsthetics or only those anæsthetics which paralyze muscular motion and do not prevent pain or suffering.

Further, that such experimentation is done often simply for practice or "showing off," as it were, interesting phenomena. That the vivisectors are men blind and deaf to all evidence of pain and suffering. This is untrue and false.

No class of people know better than do Americans what constitutes cruelty to animals and no country has such wise and sane laws on this subject as do the States of this fair land.

Cruelty to Animals—Whoever overdrives, overloads, overworks, torments, deprives of means of sustenance, cruelly beats, mutilates, or cruelly kills, or causes to be so done, inflicts unnecessary cruelty upon animals and should be punished by imprisonment.

Such is the law here and elsewhere.

We, no doubt, all agree that experimentation, especially when accompanied by vivisection, should be undertaken only by properly qualified persons and only by those who have a due appreciation of their responsibilities in this undertaking.

Every regard should be paid for the comfort of the animals employed. The ultimate aim of this work is the *progress of knowledge* and the consequent relief to suffering which is so often the result of ignorance.

The benefits which may accrue from such animal experimentation are felt not only by human beings but (as in veterinary practice) by animals also.

No attempt will be made by me to defend experiments which have not these

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distinct aims in view. The ideal experiment is one performed without anæsthesia and without pain. In many cases this ideal can be realized, but in others it is not obtainable.

Pain must be absent (1) on the broad ground of humanity, (2) because it is a far greater disturber of the normal body functions than anæsthetics, and (3) because the struggles of the animal in pain would nullify the accuracy of the experiment, (4) also such resistance would endanger the safety of the delicate apparatus which it is necessary to employ in such work.

Exactly the same argument applies to the study of experimentation of conditions concerning *Aseptic Methods* of Surgery. Here experiments in which the animal is kept alive after an operation to study its effects must be accompanied by the healing process, which is then painless, and if asepsis occurs there is absence of fever and inflammation; these latter would complicate the issue and render void the test.

It is therefore for two reasons that experimenters use both *anaesthetics* and *antiseptics,* (1) to save an animal from suffering pain and (2) to ensure the success of the experiment.

The science of thought is the science of life.

To understand the meaning of vital processes it is necessary to study the living organism, and to obtain this knowledge it is sometimes necessary to perform experiments on living animals.

Some persons regard all experimentation as cruel, detestable and immoral because of unscrupulous misrepresentations put forward by agitating fanatics who do so without apparent reason or purpose. The barbarities recorded by certain anti-vivisectors do not in reality exist. The repetition of these stories, in spite of repeated contradictions, is, no doubt, incident to wilful misrepresentation and exaggeration oftentimes, but in some instances it may be due partly to ignorance of the meaning of the technical terms employed by physiological writers or misplaced affection for dumb beasts.

Repeated investigations here and elsewhere have been made, and charges made against experimenters have been carefully sifted, and in no single instance has a charge of cruelty been sustained. All horrifying cases of torture reported, have, in the light of fair analysis and reason been abundantly disproven, and these unfair and untruthful statements have been made only to be later retracted.

There are always two sides to every question. Vivisection is no exception—there are those who favor this form of research and there are those who oppose it.

We will take up the side of the opponents to experimentation. I do not wish to raise bias to influence fair judgment, but I must present my facts as history gives them.

The *Shambles of Science*—the title of an article against experimentation, and which enjoyed but a short life, occasioned a libel suit in which damages of £2,000 Sterling was assessed against this work, the court characterizing it as the "hysterical work" of a fanatic. The Lord Chief Justice advised that such a book should be immediately withdrawn from publication, yet this book has been re-issued with the chapter that formed the subject of the libel entirely omitted. Lovers of idle sensation can still read this work, but on what merit can it ask for your consideration?

Now let us look the facts squarely in the face.

What have the Anti-vivisectionists done? What benefit has come from their hands?

Dr. W. W. Keen, an eminent surgeon, is authority for the following:

> "The anti-vivisectionists have not a single life saved by their efforts.
> "Not a single beneficent discovery has been made by them.

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"Not a single disease has been abated or abolished by them, either in animals or in mankind.

"All that they have done is to resist progress, to spend money to conduct campaigns—of abuse and misrepresentation.

"They care apparently little or nothing for the continued suffering and death of human beings or the grief and ensuing poverty of innumerable families.

"They have provided that 26 out of every 1,000 dogs, cats, monkeys, guinea-pigs, mice and frogs experimented upon shall escape some physical suffering.

"They insist that all experimental research on animals stop and that thousands of human beings and useful animals shall continue, year after year, to suffer and die."

The Age of Experiment is the Age of Progress.

Stop experimentation and you stop progress—medicine is no exception.

Dr. S. Weir Mitchell, an intimate friend of Dr. Keen's, when visiting the anti-vivisectionists' exhibit in Philadelphia, put the matter of the opposition to experimentation in a nutshell when he said:

"Your exhibit is not quite complete—you should place here a dead baby and there a dead guinea-pig, with the motto: 'Choose between them.'"

The anti-vivisectionists may be sincere, but it is the opinion of many that they are not fair in their methods of opposition.

Many persons seek light and truth about animal experimentation. The word vivisection is objectionable, for its meaning is usually extended to cover experiments on the effects of the varied and difficult problems connected with nutrition and physiological chemistry, efforts to determine the processes of digestion, the effects of drowning and the value of various methods of resuscitation, of hypodermic injections of various drugs, but none of these involve any "cutting up of a living animal." Only about 6 per cent. of all experiments on animals are strictly vivisections. Every surgical operation is literally a human vivisection—and we take it for granted that these are done humanely and properly and an anæsthetic is used, whether such fact is so stated or not. Then why not in simple justice so infer when reading or being told about animal experimentation?

The Real and Necessary Object of Vivisection.

While animals have benefited enormously from experimental research, the chief object has been to benefit the human race, to diminish suffering, baffle death, and save the breadwinner to the family and the country, or the loved one to relatives.

There are only three ways open to lessen or abolish disease:

1. Try a new remedy or method or operation and try it *first* on man—God forbid—yet there are advocates of human vivisection.

2. Try them first on the lower animals and then on man, provided the trials on animals showed that they would be an improvement upon existing methods. If trials on the lower animals proved that they were ineffective or dangerous then they should not be tried on man at all.

3. Try no experimentation at all either on animals or man, that is to say, "Never make any progress."

Remember, that the least deviation from the usual practice, whether in using a new drug or even a larger or smaller dose, or in a different way, is an *experiment.*

Hypodermic injections were unknown until about 50 years ago.

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Lumbar puncture—In order to make a diagnosis and later to inject a remedy, was unknown until a little over 20 years ago, and has only become routine within the last few years.

"*Clinical observation*" is constantly vaunted by the "Anti's" as the proper and best method of progress. I would be the last to decry this method of progress, but the moment you act on your clinical observation by any new method, any new dose, or drug, or any slightly varied or new operation you are making an experiment and on a human being.

If the departure is so great from prior procedure, is so great as to involve serious results, then I hold that no one has any right to try such upon a human being first, if it is possible to test it on a lower animal.

In *seven years of experiment* on animals more was done for alleviating human misery from the ravages of syphilis than clinical observation has done in over 4 centuries.

Objection has been made that animals are so differently constructed from man that inferences from results on animals are of no value in the case of man. There are a few such differences—these are known, and even if sometimes marked differences did exist, such for instance as the effect of belladonna or of opium—but as a fact, barring these few exceptional cases, the organs and functions of man and animals correspond exactly in health and disease and the effect of drugs and operations are parallel and in most instances identical.

The "Anti's" claim the support of a large number of doctors. Undoubtedly there are some physicians who endorse their views, but who are they? Investigation into these names shows that if the persons to whom they belong are living they are unknown in the profession of medicine. A few of earlier times were men of distinction, but to cite the opinions of men who died years ago against the opinions of similar leaders of today, is like citing opinions of eminent engineers of the last century as to the methods and even the possibilities of constructing a Panama Canal—you know it was for years considered by the most eminent as impossible—but it was done, against the opinions of engineers of today. Facts speak for themselves.

Syphilis and Vivisection.

Many of the victims of this dreadful disease are innocent.

Many are innocent little children—unborn babies. Some are dead when born, others destined happily to an early grave, and still others, less fortunate, doomed to drag out a most miserable existence.

Of course, it would be impossible, except as a last desperate resource, to experiment with this disease on human beings.

Mechnikoff—1903, first succeeded in inoculating this disease in apes and later in other animals.

Experiments, heretofore impossible, were immediately begun.

In 1905 Schaudin and Hoffman thus discovered the germ.

In 1910, after a most extraordinary series of experiments with 605 other remedies, Ehrlich discovered Salvarsan, "606," since which time we have had the whip-hand over this plague.

Anti-vivisection if followed to its logical end would not let us fish as a business, for the fish are suffocated by their removal from the water and are thus "tortured," not for their benefit, but for our food.

Would it not also be illogical to poison or trap a rat, even if the plague were at our doors? Or a mouse, if the house is invaded? Or to starve the typhoid-fly in a trap or on "tangle-foot" paper? Or to poison a roach, though its instant death under foot would be allowable?

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To judge of the character of argument presented by the "Anti's" let us select some of the phrases or epithets used by the writers in favor of not permitting experiments on animals—the mass of terms indicates the vehemence of the opposition.

Scientific hells	Torture house
Orgy of cruelty	Halls of agony
Inhuman devils	Devils incarnate
Devil's work	Scientific murder
Abominable sin	Devilish science
Fiends incarnate	Arch fiend
Damnably mean	Master demon
Infernal work	Hellish wrong
Diabolical vivisection	Bloody mass of agony
Deliberate dabblers in blood	Temples of torment
Cruelty of cruelties	Lust of cruelty
Scientific assassination	Torture of the innocent
Black art of vivisection	Satanic
Imps of hell	Fiends
Human monsters	Demons
Working model of hell	Devilish inventions

Such are some of the many terms applied to vivisectors and research institutions by these advocates.

What vivisection has done for human beings and animals.

The achievements of research:

1. Antiseptic method of surgery made possible.
2. The many wonders of modern surgery are largely the results of animal experimentation.
3. Surgery of the internal organs—stomach, spleen, liver, appendix, intestines, gall stones, kidneys, and female organs is possible through the study of infection by experimentation on animals.
4. Modern and wonderful surgery of the brain made possible through experimentation.
5. The new surgery of the chest, including the heart, the lungs and large vessels made practical through experimentation on animals.
6. Tetanus (lockjaw) has been almost entirely abolished. Prevention is possible only through such experimentation on the lower animals. This formerly often occurred after operations and after accidents, especially pistol shot wounds and fireworks.
7. Reduced the death rate in open fractures (compound) from 66 in a hundred fatalities to less than one in a hundred.
8. Reduced the death rate in major female operations from 66 in a hundred to from 2 to 3 in a hundred.
9. Made the death rate in operations for rupture, amputation, and removal of tumors a negligible factor.
10. Abolished yellow fever—a wonderful triumph—and through its sanitary effect on engineering problems, made possible the Panama Canal. In this instance human volunteers had to be used and one, Dr. Lazaar, sacrificed his life.
11. Diminished materially the ravages of malaria.
12. Reduced the incidence of rabies (hydrophobia).

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13. Devised a method of direct transfusion of blood, which has saved many precious lives.

14. Cut the death rate of diphtheria. All over the world—in 19 European and American cities the death rate has been made to fall from 79.9 per 100,000 population before antitoxin to 19 per 100,000 (1894 before—1905 after). The rate is less than ¼ its former rate.

15. Reduced the mortality of epidemic cerebro-spinal meningitis from 65% to under 25%.

16. Largely abolished post operative hospital sepsis and gangrene, the foes of surgical undertaking. Formerly no matter how brilliant the operation or the operator, these fatal hospital diseases, sepsis and gangrene, were apt to appear and destroy the patient.

17. Made operation for goitre possible.

18. Aided in reducing the death rate of tuberculosis. Koch's discovery of the germ of consumption is the "*corner stone*" of all of our modern sanitary achievements.

19. Through animal experimentation the British Army abolished malta fever. Before research this destroyed in 1905, 1,300 men of the garrison; in 1909, after research, there was only one death.

20. Almost abolished puerperal (childbed) fever. Statistics before discovery, 5 to 57 deaths of mothers per 1,000, while today after such discovery the rate is 1 in 1,250 births.

21. Discovered Salvarsan, "606," which bids fair to protect many innocent wives and unborn children.

22. Typhoid vaccine largely abolished typhoid from armies of the world wherever used.

23. Through animal experimentation we are gradually lessening the ravages of cancer and we hope we are approaching the discovery of the cause of cancer, poliomyelitis, and other children's diseases; then we hope the cure will quickly follow.

25. Sleeping sickness—methods of transmission, pathology, and treatment.

26. Animal experimentation has enormously benefited animals by discovery of the causes, and in many cases the means of preventing, and in some a positive cure. Conspicuous among these are tuberculosis, rinderpest, anthrax, glanders, hog cholera, chicken cholera, lumpy jaw, and other diseases, some of which also attack mankind.

Surely this list is sufficient reason to forward for experimentation and any intelligent person would be sufficiently influenced by the same. When science has progressed through this aid, who is the fellow who would dare stay the hands of men who are trying to lift the curse of disease from the whole race, not only of mankind, but of animals also? I say, if there be such creatures, let such cruel ones, enemies of our children, of our sick, in fact enemies of humanity, let them stand up and be counted by all.

There is still much work to be done—in fact, we have just crossed the threshold of preventing and curing of the infectious diseases.

The work on malarial fever is advancing rapidly through mosquito study, and if we continue to progress as fast as we have in the past ten years, this dread disease will be annihilated.

The pain inflicted in all the laboratories of the world put together during an entire year is less than that which is every day inflicted in the slaughter of animals

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for food, and this, too, under the most modern cruelty of animal supervision; also, to that which farm laborers inflict in spaying animals by thousands in order that beef and mutton may be more tender or have a more pleasant flavor; to that inflicted by the hunter when the victims of his sport are imperfectly shot, die a lingering death, or wounded are unable to water and feed themselves and so suffer interminably; to that which women allow in order to have fine feathers (ospreys) in their hats and furs upon their backs.

So far as the satisfaction of appetite, the pandering to the so-called sportsman's instincts, or the gratification of vanity are concerned, those things known to be useless and cruel, may go on uncriticised or unchecked. The "Anti's" disregard these facts or to date have made no effort to prevent them, so far as we can determine. The only pain which seems to stir the feelings of the "Anti's," meeting their disapprobation and enabling them to indulge in their familiar epithets, is one of the most justifiable bits of pain in the whole world—a pain inflicted with the noblest of all objects and by humane men, for so admittedly must the medical profession be considered—that object being to prevent future pain, which otherwise would encompass the whole of life.

The "Anti's" do not come in contact with disease and suffering all day and every day as medical men do, therefore it is impossible for them to realize how widespread sickness really is and what terrible form it takes in many instances. Their ideas are vague, they talk about physical suffering without any intimate knowledge of this question.

These bestow their sympathies along upon the moderate number of animals subjected to the vivisector's knife or syringe—guinea pigs, dogs, rabbits, mice, monkeys, etc.

They have no sympathies for the large number of victims of preventable disease which would have suffered far more intensely if the few had not been sacrificed. Can it be wondered at that medical men, whose experience is so different from theirs, should feel otherwise? The busy doctor's life is not one in which there are just a few painful partings with dear ones, but he has many daily experiences, his life is literally steeped in pitiful and sad experiences, from early morn till late into the night. His sympathies aim at the relief and cure of all this evil and the death of a few guinea pigs or rabbits is a necessary incident which he has the courage to permit because of the greater good that is the ultimate result.

Diphtheria.—The change in our opinions regarding this disease, incident entirely to animal experimentation, is incontestable. This disease no longer inspires the terror it used to do, for it is one that can be definitely ascertained, and if early detected, can be quickly and easily cured by the method of serum therapy.

Typhoid Fever.—It was not until the germ of typhoid fever was isolated and generally recognized; not until its growth and means of its destruction, not until its methods of transmission were fully understood, that this very serious malady was controlled. Today it is a rarity in many of our largest cities. Medical schools are complaining that students through a whole four-year course fail to see a case in order to study it clinically.

Immunity to Disease—

Bacteriology is at the bottom of hygiene and sanitation.

It is by observing hygienic precautions that certain communicable diseases are prevented.

The basis of bacteriology so far as it relates to the production of and recovery from disease is animal experimentation.

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Filth or dirt has been defined as matter out of place. Blood on a carpet is certainly dirt, and it ought not to be there, but blood in the arteries or veins is in its right place and it does the duty of nutrition. One of these duties is to exact a protective influence upon the whole body. We are exposed, all of us, so long as spitting in public places is not prevented, to the germs of many communicable diseases, particularly consumption and influenza, but we do not all die of these diseases. This is mainly because the scavengers of our system—the white blood corpuscles—are in good trim and are able successfully to devour the bacteria that enter our interior.

It is only those persons who are "run down" and in whom the white corpuscles are below par that contract disease. In assisting the white corpuscles to perform the duty of destroying dangerous organisms entering our bodies, the cooperation of certain substances dissolved in the fluid portion of the blood is also essential.

Some time ago—quite recently—there was discovered auxiliary substances and we called them "Opsonins," from a Greek word which means "to prepare the feast." The opsonin either adds something to the bacterium which makes it tasty to the white blood corpuscles (or neutralizes) or modifies something which previously made it distasteful. The white blood corpuscles will not ingest and devour most bacteria from an ordinary culture fluid, but they do so eagerly and immediately the bacteria are bathed in serum and the serum which is most efficacious in acting as a sort of sauce is that which has been obtained from an animal which has been previously infected with the same kind of bacteria, and which has recovered from the ailment such bacteria have set up. This is not mere fancy or theory. It is well known that the yeast plant (yeast, by the way, is very similar in many details to bacteria) may be grown in a solution of sugar and that the sugar is broken up and disappears and two new substances formed from the sugar take its place. One of these is the poison alcohol.

If bacteria grow in the blood they produce poisons in a way analogous to that by which yeast produces alcohol. These poisons are called *toxins*.

There are substances in the blood which are called antitoxins, because they neutralize the toxin produced by the bacteria. The presence of antitoxin (diphtheria) is a means of natural defense against the harmful effects of the toxins which they would otherwise produce. This may be determined by a test devised by a scientist and is called after his name, "The Schick Test."

The marvelous part of nature's defense is that unless we are overwhelmed quickly, antitoxin in our blood increases in proportion to the amount of toxin. How can we explain this? The following is a practical method of so doing. It is a familiar fact that manual labor increases the hardness of the palms of the hands—the friction stimulates the outer cells into increased activity, so that the top layer of the skin grows in thickness. The body affords numerous instances of how it is capable of "rising to the occasion" and increasing its defenses when called upon similarly. Just in this same manner the presence of a toxin in the blood stimulates living cells to produce more and more antitoxin. Another peculiar fact is also demonstrable—the blood remains rich in antitoxin for a considerable time afterwards, this showing how it is that one who has had an infectious disease does not readly take it a second time. He is *immune*, we say, and will continue to resist reinfection for a certain number of years, because his blood is so rich in the antidote. By infecting the horse we can obtain these anti-bodies in great concentration and transfer them to human beings of all ages, and so prevent and cure several diseases.

The principle of serum treatment depends upon these ascertained and definitely proven facts, the direct result of animal experimentation.

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Now something about consumption. How may we cure this dread disease? We know the cause, but we have not as yet discovered a remedy. Scientists everywhere are working on this and they should be aided and not hindered. In the treatment of tuberculosis the doctor tries to increase nature's method of cure: good, easily digested food, pure air, at all times. These do much to increase the healthfulness of the blood stream and fortify its natural power of destroying germs. Many times this alone suffices, but at other times it is wholly insufficient, particularly if the disease has advanced and the number of bacteria is too great for the enfeebled white blood corpuscles to battle successfully against.

If it existed the doctor would administer some opsonin by injecting it under the skin, in order to increase the resistance of the patient. But in this disease (tuberculosis) we do not know the opsonin—it is up to us to find it.

The making of anti-bodies in animals for use in man or animals for the prevention and cure of disease:

Let us choose for description diphtheria antitoxin:

A pure culture of virulent diphtheria germs is grown in broth and the toxins formed are filtered off and a certain amount is injected into a horse. A slight swelling appears locally. When the animal has recovered, a second larger injection is given. This blood is collected. This is repeated several times, for it is rich in diphtheria antitoxin, the natural antidote that has enabled the horse to withstand at the end of the series of injections a dose of toxin, which if given earlier would have killed it. The horse's blood is allowed to clot, and the liquid residue (serum) contains the antidote. This is purified and concentrated and is the diphtheria antitoxin used so successfully in the treatment of diphtheria in human beings. But it must be given early and in sufficient dosage. The Department of Health gives a schedule of dosage according to age of patient and character of disease.

What more natural way is possible of treating a disease? It has been used in this city since 1895, and has reduced the death rate from diphtheria from about 40% to 8%.

The pathologists at first were timid about using horse serum in human beings even if it carried the life-saving antitoxin or opsonin, but Professor Richet argued that if this serum protected a horse injected with many times a fatal dose of diphtheria toxin, it should do so in the case of a human being, and he tried it and it was successful.

The diphtheria poison is very deadly in the human being, therefore to be effective, it must be used early in order to antidote the toxin. Today the treatment of diphtheria is mainly by using diphtheria antitoxin. Not to employ it indicates that the doctor is uninformed and is jeopardizing the precious life of his patient and to continue not to use such an antidote is little short of criminal.

Diphtheria has not been stamped out because the efforts of prevention are not adequate and those that are known to science are not uniformly and generally applied.

Prevention, it is true, is better than cure, but cure is better than suffering and death. Today the medical profession can positively cure diphtheria, and by use of a vaccine can prevent it, and if medical progress continues its stride as it is doing, who can doubt but that in the very near future diseases like yellow fever, typhus, typhoid and small pox will not only be rare, but will be stamped out.

Why, may we ask, has typhus and typhoid fever died out in our large American cities? In our opinion it is incident directly to the learning of their nature, improving sanitation and destroying the vermin that transmit typhus and the bacilli which cause typhoid fever. How did we learn these facts? Of course, largely through animal experimentation.

Many citizens quite often complain of the extravagances of public officials and of the indifference in quarters affecting health. Why is this? But, you will say,

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how does this come in here? The public authorities are not vivisectors. No! it is true that in many instances they are not, but the action of all public health officials is directly due to the desires of public opinion—healthy public opinion which has been preached to deaf ears for many years, has at last impressed itself upon many minds and this knowledge was the offspring of pathological experiment. It was not until the germ of typhoid was isolated and recognized that prevention and control through such means as the pasteurization of milk and the purification of water became certainly possible, yet these alone were not wholly effective under conditions such as exist in warfare until the immunizing vaccine was produced, tested on animals and man and then successfully used in our armies. Now having such a lesson before us, must not the people obey the teachings of science?

Let us pursue this vivisection still further.

A ship enters our port. It is infected with *plague* and the ship is also infested with rats—carriers of plague.

Would it be preferable to kill the rats and so prevent them and the disease—a terrible pestilence—entering our port? A plague visitation would cause untold disaster. Or would staying one's hand, because the slaughter of the rats would be a painful proceeding, be the more preferable?

The captain who spared the rats would be guilty of a criminal act which would cause the unnecessary death of many innocent human beings, and I might state that it is so with many anti-vivisectionists, who by their acts are similarly causing the deaths of many innocent human beings, as well as animals.

The anti-vivisectionist sees only the pain inflicted and does not heed the pain prevented.

Conclusions.

Unnecessary and needless vivisection should be stopped.

Vivisection by inexperienced, unsophisticated, and improper individuals should be stopped.

All vivisection should be accompanied by every possible precaution to prevent suffering of all kinds.

No one should needlessly restrict scientific bodies in pursuit of knowledge to aid the sick or suffering.

That experiments upon living animals have proved of the utmost service to mankind in the past and are indispensable to the future progress of medicine and public health.

While strongly depreciating the infliction of unnecessary pain, it is our opinion—alike in the interest of man and of animals—that it is not desirable to restrict competent persons in the performance of animal experimentation.

We regret the widespread lack of information regarding the aims and achievements and the procedures of animal experimentation, and we deplore the persistent misrepresentation of these aims, purposes and achievements.

We protest against the frequent denunciation of self-sacrificing, high-minded men of science who are devoting their lives to the welfare of mankind in efforts to solve the complicated problems of living beings and their diseases.

It is our opinion that unrestricted performance by proper persons of scientific experiments upon living animals is essential to the maintenance and progress of medicine and its allied science biology.

There is not, so far as I can learn, a single resolution of any scientific body expressing a contrary opinion.

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THE MEDICAL UNIT OF A FACTORY.

By RUDOLF RAPP, M. D.
Medical Inspector, Division of Industrial Hygiene.

Before going into the complete details of the routine work of a medical unit in a factory, I will first explain the necessity for such a unit or department; second, in the proper personnel needed and their respective duties; and third, the quarters and equipment.

A medical unit is needed in every factory because of major and minor injuries, which, despite automatic safeguards and safety bulletins, are of daily occurrence in operating high velocity machinery. Immediate and proper attention to injuries received may prevent infection, shorten the time of disability, and save life. Medical supervision over factory help will reduce the loss of time of workers suddenly indisposed and necessitating aid from outside the factory, thereby decreasing output of work and the employee's pay.

Physical and mental examination of new employees will result in selecting the man fit for the job, thus reducing labor turnover, accidents, disability due to fatigue and overwork, and eliminating the man uninterested in his work, or incapable of properly performing that assigned.

Physical and mental examination, periodically, of other employees will note the changes in their physical condition, re-assign the shopworn and fatigued to easier berths, and promote the fit and meritorious, so increasing the output and general efficiency.

The proper medical personnel consists of an industrial physician, industrial nurse or nurses, first aid, a clerk, a superintendent or manager, ex-officio, and a visiting dentist.

The Industrial Physician.

The industrial physician should be a graduate of a recognized medical college, duly licensed in the State, with hospital experience obtained as interne in a general hospital. He should have a working knowledge of occupational diseases, minor surgery, X-ray, nose and throat, diseases of the skin, communicable diseases, refraction of the eye, and nervous diseases. Naturally he should be cool, collected, pleasant; interested in his work, in the success of his plant, and in the welfare of his people. A conversational knowledge of either Spanish, Italian, Polish, Bohemian, Russian or Greek would be of great advantage to him with alien groups.

Routine Duties—He should arrive at the factory at a scheduled time, and attend medical and surgical cases, as per appointments made by the clerk. He then should receive the report of the nurse of her findings in the plant, and consult with her as to possible correction of undesirable conditions in reference to sanitation, industrial hygiene, and welfare work. On certain days he should conduct physical examinations of new employees (females with the assistance of the nurse). He should confer with the superintendent or manager on various topics relating to the needs of the plant. He must give special examination to cases referred to him by the nurse, *i. e.*, malingering, case to be sent home, etc. He should make his rounds weekly, visiting all the departments, studying the condition of safeguards, hygiene, general health of employees, etc. He should consult with the foreman on this subject. Careful records of the findings at physical examinations and of injuries attended must be entered on proper blanks by the physician. A daily report of the work done should be forwarded to the superintendent's office at the close of the day's service.

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The Industrial Nurse.

The industrial nurse should be registered in the State and have a surgical and supervisory experience. She should be deeply interested in her work, have a pleasant disposition, be courteous to all, and make friends easily. Any information of confidential nature she may receive from the employees should be recognized as such and be considered sacred, except matters relating to medical work, which should be referred to the physician for further advice. A knowledge of foreign languages is of invaluable assistance.

Routine Duties—The nurse should arrive shortly after the opening of the factory. She should proceed at once to the medical office. She should see that everything is clean and in place, fill the medicine bottles and boxes with stock preparations, and label the same accordingly. She should send for employees needing medical care, and attend to minor surgical dressings upon the physician's order. She should visit the various departments, paying special attention to the wants of any female employee. She should follow up cases seen by the doctor the day before, and inquire as to the present physical condition. She must also try to clear up any misunderstandings between doctor and patients. She should request examination for those showing signs of strain or fatigue, poor work, slacking, and those who absent themselves too frequently from work. She should confer with the foremen about the different departments.

First Aid.

The "first aid" man should be able to apply artificial respiration, control hemorrhages and do antiseptic dressings. He should be sympathetic, and refer each case seen to either doctor or nurse, and keep a record of his work.

The clerk should have a pleasant manner, write legibly, attend to answering the telephone, receive messages, and arrange for appointments with the doctor, bearing in mind the necessity of preventing any unnecessary waste of the employees' time. He should be in charge of the statistical work of the department and the files. At no time should any information be given as to the condition or treatment of any employee. Any requests for information are to be left to the doctor for final disposition.

The superintendent should be a broad-minded man, and have the full confidence of his medical personnel. He should find time to confer with his physician on matters pertaining to the needs of the plant. He should be ready to co-operate with the medical department to the extent of his power. No criticism of the work of the unit should ever be permitted before employees. The good results of a medical unit will show in time, and cannot be expected at once. The officials must bear this in mind and render all possible assistance to the medical unit.

Proper Quarters and Equipment.

It is absolutely necessary to have a waiting room and a dressing room, one adjoining the other, separated by doors. The quarters should be centrally located, and all rooms be properly heated, lighted, and ventilated. The windows must be clean and curtained. The waiting room should be simply furnished, pleasant to the eye, have chairs with comfortable back rests, a lounge, a few good pictures on the wall, a desk and chair for the clerk. The office or examining room should be finished in white, preferably, except in certain industries. This room should be the largest of all, should contain an operating table of simple construction, an instrument case, dressing table, desk and chair, scale, X-ray apparatus, dental chair, sufficient toweling, and hot and cold water. The lighting of this room must be exceptionally good and adjustable. A receptacle for sundries should be installed. The instrument case should be large

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enough to hold all necessary instruments for surgical and dental procedures; *i. e.*, knives, dressings, forceps, clamps, needles, needle holders, eye and ear instruments, blood pressure apparatus, microscope, and dental instruments. The dressing table is to contain jars for cotton, iodoform, gauze, pus basins, bandages, adhesive plasters, measuring glassware, urine analysis set, and drugs, such as argyrol, alcohol, peroxide, iodine, freezing mixture for use as anesthetic, aromatic spirits, etc.

Desks should be simple in construction, and should contain drawers for filing system. The top of the desk should be supplied with writing paraphernalia, telephone register of all the departments of the plant, their chiefs and foremen, with the telephone extensions. The dressing room should contain a toilet compartment and a lounge or couch.

Routine of the Medical Service.

The clerk should be notified by an employee desiring medical advice, and arrange an appointment. The foreman or assistant foreman should fill out a signed blank, in duplicate, stating name of employee, department clock number, and time of appointment; one blank to accompany the patient and the other to be forwarded to the office. At the office the clerk or nurse fills out a history blank, and the temperature is taken in a medical or surgical case. Then the employee awaits the doctor's examination. When expedient, the slip is returned to the foreman of the department with diagnosis, remarks, and time of second appointment, where necessary. The record of findings is put on employee's case card and also on the daily report of doctor to the general office.

In case of accident or emergency, the clerk is notified to send physician, nurse, or first aid man to the department concerned. Afterwards proper records are made out, and the history of the accident is written. In conclusion, it should be stated that an efficient medical department should work in perfect harmony with the safety department and the general welfare division. Any suggestions received from them should be duly considered and, if satisfactory, acted upon.

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SUMMARY OF VITAL STATISTICS FOR JULY, 1920.

The residents of the city enjoyed unusually good health during the month of July, as evidenced by the low death rate. The number of deaths reported during the month was 4,566, equivalent to a rate of 8.76. During July, 1919, the death rate was 9.91.

The most important reductions in mortality were of pulmonary tuberculosis, of the diarrhoeal diseases amongst children under five years of age, of Bright's disease, and of violence.

The marked decline in the death rate of tuberculosis is worthy of further investigation as to its cause, because, while the death rate of this city from this cause has been steadily forced down for a number of years, the downward curve has become much more acute this year. The question arises as to whether or not the physical examination conducted by the Draft Board brought to light a number of early cases, which were thus enabled to secure treatment, while the prognosis of their diseases was good, thus reducing the mortality of the disease. This explanation seems plausible, and if investigation finds any basis for it, it would emphasize the importance of early diagnosis and might indeed be used as a strong argument for periodical examinations conducted either by private physicians or by the health authorities.

There were 3 deaths reported from sunstroke during the month, as compared with 28 during July, 1919. The reduction in the mortality of this cause is, of course, to be attributed almost entirely to the milder weather that prevailed during the month, although education of the public has been responsible for a reduction in the number of deaths reported from this cause during recent years, as compared with previous ones.

The reduction in the mortality of the diarrhoeal diseases to 319 deaths during the past month, as compared with 404 during July of last year, must also be attributed, in large measure, to the more favorable weather conditions.

The most important increase in mortality was that of whooping cough, the number of deaths reported from this cause mounting from 20 during July, 1919, to 55 during the past month. The other acute contagious diseases showed very slight variations in their mortality during the past month, as compared with the corresponding month of 1919.

Examinations of the ages of the persons who died during the past month disclose the fact that the saving of life was shared by all the age groups, and that, of the 500 fewer deaths that occurred during the month, 50 were amongst the group under one year of age, 21 amongst the group from 1 to 2 years, and 73 amongst all children under five. In the group from 5 to 15 years of age, there were 29 fewer deaths; in 15 to 25 years, there were 49 fewer deaths; between 25 and 45, there were 125 fewer deaths; between the ages of 45 and 65, there were 64 fewer deaths, and 80 fewer deaths among the group over 65.

Amongst the colored population, there was an increase of 51 deaths during the month. This, however, is probably explainable on the basis of the increased negro population of the city, but it should not, however, be dismissed with this plausible explanation without further investigation.

Eleven thousand six hundred and sixteen births were reported during the month, as compared with 10,440 during July, 1919. There was a corresponding increase in the birth rate; to wit: from 20.48 to 22.29. Last year, the birth rate of the city fell to its lowest point. This was brought about by a number of causes, among them the cessation of immigration, the drafting of men of marriageable ages, and the speeding up of the industries which increased the number of women employed. The return to civil life of the soldiers and the return of the industries to normal conditions have already brought about a marked increase in the birth rate. With the resumption of immigration it will, no doubt, rise to its former level.

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Five thousand two hundred and forty marriages were reported during the month, as compared with 6,451 during July, 1919. This decline in the marriage rate is due undoubtedly to disturbed financial conditions. The marriage rate is an unfailing index of prosperity. Examination of the marriage rate of the city for previous years indicates to what extent this has been true. During every year in which a presidential election was held, there was a noticeable decline in the marriage rate, because of unsettled business conditions. This year we have an additional factor in the ever mounting cost of living, both together having brought about the rather sharp decline in the marriage rate. During July, 1919, the rate was 12.65; during the past month the rate was 10.05, a drop of 2.60 points.

The summary of infectious diseases reported during the month showed that 1,700 more cases of infectious diseases were reported during July this year than during July, 1919. The most important increases, numerically at least, were in the number of cases of syphilis reported, 1,823 being reported during the month just passed, against 1,161 during 1919. Undoubtedly, this increase is, in large measure, attributable to more perfect registration, a direct result of the propaganda carried on.

Whooping cough showed a very marked increase in the number of cases reported, 699 compared with 184.

More cases of pulmonary tuberculosis were reported during the month than during July of last year. The increase, however, was limited to the boroughs of Manhattan, Queens and Richmond. Both Brooklyn and The Bronx show decreases.

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POPULATION, MARRIAGES, BIRTHS AND DEATHS, JULY, 1920.

Boroughs.	Population U. S. Census April 15, 1910.	Estimated Population July 1, 1920.	Certificates Received and Tabulated.			Rate per 1,000 Based on Department Estimate.			Corrected Death Rate. **	Corr'td Death Rate Correspon'g Month 1919.
			Marriages	B'ths	* D'ths	Marriages.	B'ths.	D'ths.		
Manhattan	2,331,542	2,829,239	3,017	5,050	2,084	12.56	21.03	8.68	8.46	9.46
The Bronx.	430,980	669,233	489	1,282	496	8.61	22.57	8.73	8.64	9.58
Brooklyn..	1,634,351	2,117,908	1,311	4,147	1,458	7.29	23.07	8.11	8.62	10.37
Queens. ..	284,041	419,506	324	880	368	9.10	24.72	10.34	10.34	10.32
Richmond.	85,969	105,559	99	257	160	11.05	28.69	17.86	14.18	13.19
N. Y. City.	4,766,883	6,141,445	5,240	11,616	4,566	10.05	22.29	8.76	.....	9.91

*Includes 125 deaths of non-residents of the city, which, if deducted, would give a death rate for the city of 8.52 per 1,000.

**Corrected by redistributing deaths according to borough of residence.

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REGISTERED MORTALITY FROM PRINCIPAL CAUSES.

JULY, 1920.

	Manhattan.		The Bronx.		Brooklyn.		Queens.		Richmond.		City of New York.	
	July.		July.		July.		July.		July.		July.	
	1920	1919	1920	1919	1920	1919	1920	1919	1920	1919	1920	1919
Total, all causes	2031	2232	491	525	1549	1823	368	356	127	116	4566	5052
1. Typhoid Fever	8	3	...	1	6	5	1	2	...	...	15	11
3. Malarial Fever	1	....	...	...	....	1	...	...	...	...	1	1
4. Typhus Fever	....	....	...	...	....	....	...	...	...	...	....	....
5. Measles	6	8	...	1	7	7	1	...	...	...	14	16
6. Scarlet Fever	6	4	1	1	2	3	1	...	1	...	11	8
7. Whooping Cough	29	5	5	4	14	11	4	...	3	...	55	20
8. Diphtheria and Croup	16	32	5	5	10	16	9	1	1	1	41	55
9. Influenza	6	2	1	3	5	6	3	1	1	1	16	13
10. Cholera Nostras	....	....	...	...	....	1	..	...	...	...	....	1
11. Poliomyelitis	1	....	1	...	....	1	1	...	...	...	3	1
12. Other Epidemic Diseases	7	8	1	2	5	4	...	...	...	1	13	15
13. Tuberculosis Pulmonalis	222	274	47	79	155	170	31	31	11	10	466	564
14. Tuberculous Meningitis	22	24	7	7	18	26	2	2	...	1	49	60
15. Other forms of Tuberculosis	17	31	2	5	11	13	5	6	1	3	36	58
16. Cancer, Malignant Tumor	169	176	49	55	146	150	35	34	9	8	408	423
17. Simple Meningitis	8	10	3	2	8	12	3	...	...	2	22	26
Of which												
17a. Cerebro Spinal Meningitis	3	8	3	...	2	7	...	...	...	...	8	15
18. Apoplexy and Softening of the Brain	28	20	8	6	13	22	2	3	2	3	53	54
19. Organic Heart Diseases	293	253	74	94	281	271	67	56	18	9	733	683
20. Acute Bronchitis	16	11	...	...	8	9	2	...	...	...	26	20
21. Chronic Bronchitis	2	3	...	2	1	3	...	...	...	..	3	8
22. Pneumonia (exc. Broncho Pneumonia)	50	77	8	15	54	59	3	13	2	2	117	166
22a. Broncho Pneumonia	84	66	11	15	43	56	3	3	2	4	143	144
23. Other Respiratory Diseases	13	11	1	...	12	13	2	...	...	2	28	26
24. Diseases of the Stomach (Cancer excepted)	13	6	1	8	5	6	...	1	2	1	21	22
25. Diarrhoeal Diseases (under 5 years)	165	203	22	24	109	142	19	29	4	6	319	404
26. Appendicitis Typhlitis	38	28	10	13	17	41	12	7	1	...	78	89
27. Hernia, Intest'l Obstruction	16	20	6	8	12	26	5	2	3	1	42	57
28. Cirrhosis of Liver	6	11	3	2	7	9	7	2	1	...	24	24
29. Bright's Disease and Nephritis	115	155	46	23	117	174	22	37	13	14	313	403
30. Diseases of Women (not Cancer)	11	12	3	...	8	10	3	2	2	...	27	24
31. Puerperal Septicaemia	6	4	...	1	3	5	2	1	...	...	11	11
32. Other Puerperal Diseases	11	16	7	4	12	14	2	3	1	1	33	38
33. Congenital Debility and Malformations	118	122	28	23	104	109	20	22	8	6	278	282
34. Old Age	3	10	2	2	8	2	...	...	...	...	13	14
35. Violent Deaths	142	199	32	33	99	142	43	30	19	21	335	425
a. Sunstroke	...	7	2	3	...	17	1	1	...	...	3	28
b. Other Accidents	132	173	30	30	93	118	37	28	19	21	311	370
c. Homicide	10	19	...	...	6	7	5	1	...	...	21	27
36. Suicide	29	33	8	4	10	14	2	8	1	2	50	61
37. All other causes	349	394	99	82	239	269	56	60	21	17	764	822
38. Ill-defined causes	5	1	...	1	...	1	...	...	...	...	5	3

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REGISTERED MORTALITY FROM ALL CAUSES AND CERTAIN INFECTIOUS DISEASES, BY WARDS, JULY, 1920.

BOROUGH OF MANHATTAN.

Wards.	Area in Acres	Population U.S. Census 1910.	Number of Persons to the Acre.	Typhoid Fever.	Smallpox.	Measles.	Scarlet Fever.	Diphtheria and Croup.	Pulmonary Tuberculosis.	Lobar Pneumonia.	Broncho-Pneumonia.	Diarrhœal Diseases.	All Causes.	Deaths of Children Under 5 Years.
1	154.0	9,750	63.0	..	..	..	..	..	2	..	1	2	18	7
2	81.0	933	11.5	..	..	..	..	..	..	..	..	..	2	..
3	95.0	1,915	20.2	..	..	..	..	..	..	..	..	..	3	..
4	83.0	21,336	257.1	1	..	..	..	..	2	..	2	8	27	16
5	168.0	5,666	33.7	..	..	..	..	..	1	..	..	..	8	2
6	86.0	19,670	228.7	..	..	1	..	..	3	1	..	3	17	6
7	198.0	102,101	515.6	2	..	..	..	..	5	3	2	6	50	18
8	183.0	33,182	181.4	..	..	..	..	..	4	..	1	1	23	5
9	322.0	64,909	201.6	..	..	..	..	..	5	..	1	2	31	5
10	110.0	66,439	604.0	..	..	..	..	..	2	1	1	1	32	8
11	196.0	136,548	696.7	1	..	..	..	1	3	4	3	2	68	19
12	6,154.0	806,648	131.1	4	..	4	2	9	89	22	33	70	862	236
13	107.0	64,651	604.3	..	..	..	..	..	..	1	3	5	38	19
14	96.0	38,321	399.3	..	..	..	..	..	6	1	1	1	27	9
15	198.0	30,584	154.5	..	..	..	..	..	8	..	..	1	21	3
16	349.0	55,926	160.2	..	..	..	..	3	6	..	2	2	71	15
17	331.0	172,334	520.6	..	..	..	..	..	11	2	6	14	112	31
18	450.0	62,821	139.6	..	..	..	2	..	7	3	7	12	90	32
19	1,481.0	292,950	197.7	..	..	1	1	2	31	3	10	15	221	46
20	444.0	73,308	165.1	..	..	..	1	1	4	2	6	10	78	26
21	411.0	62,345	151.7	..	..	..	..	..	4	3	3	5	62	13
22	1,529.0	209,154	136.8	..	..	..	..	..	29	4	2	12	170	36
Total....	13,226.0	2,331,491	176.3	8	..	6	6	16	222	50	84	172	2031	552

BOROUGH OF BROOKLYN.

1	233.0	21,851	93.8	..	..	..	..	..	2	..	1	3	22	10
2	97.7	6,894	70.6	..	..	..	..	..	..	..	1	1	7	3
3	161.4	15,910	98.6	..	..	..	..	..	2	1	1	..	21	2
4	111.3	10,477	94.1	..	..	..	..	1	2	..	..	1	8	3
5	119.4	19,401	162.5	..	..	..	..	..	1	1	2	5	19	11
6	302.9	46,437	153.3	1	..	1	..	..	4	2	2	4	46	15
7	458.5	44,037	96.0	..	..	..	..	1	4	..	..	5	41	10
8	1,843.2	82,687	44.9	1	..	1	..	..	7	3	3	6	96	21
9	623.6	50,501	81.0	..	..	1	..	..	5	3	3	5	55	11
10	318.7	41,238	129.4	..	..	..	..	1	6	2	1	4	44	17
11	252.6	21,659	85.7	..	..	..	..	..	1	4	2	5	30	11
12	663.1	29,262	44.1	..	..	..	..	1	11	3	..	4	52	16
13	230.3	30,091	130.7	..	..	..	..	..	..	1	2	3	22	10
14	282.6	33,329	117.9	..	..	..	..	1	1	1	..	9	21	11
15	244.8	35,887	146.6	..	..	..	..	..	1	..	..	3	19	6
16	244.8	68,244	278.7	..	..	..	..	..	6	3	..	2	39	10
17	823.3	70,346	85.5	..	..	..	1	1	13	3	2	8	88	25
18	873.0	35,708	40.9	1	..	..	..	..	5	1	1	6	33	13
19	413.8	44,860	108.4	..	..	1	..	..	1	4	..	6	33	10
20	461.4	27,463	59.5	..	..	..	..	..	2	1	..	..	16	2
21	483.2	78,741	163.0	..	..	..	..	..	2	2	2	3	49	18
22	1,361.6	81,283	59.7	..	..	..	..	2	11	2	..	6	89	13
23	736.0	65,561	89.1	..	..	..	..	..	6	4	2	3	77	8
24	1,198.5	80,466	67.2	1	..	..	..	2	14	2	2	1	79	14
25	567.8	63,597	112.0	..	..	..	..	..	4	2	..	..	45	6
26	3,590.2	77,963	49.5	1	..	..	..	..	12	3	7	11	134	36
27	400.7	76,000	189.6	..	..	..	..	..	5	3	2	1	32	8
28	884.4	77,451	87.6	1	..	..	1	..	7	1	2	2	91	22
29	3,800.0	72,351	19.0	..	..	2	..	..	7	..	1	..	84	13
30	5,401.1	76,406	14.1	..	..	1	..	..	9	2	4	8	105	23
31	6,312.3	30,988	4.9	..	..	..	..	..	3	..	..	3	45	10
32	5,479.5	17,419	3.2	..	..	..	..	..	1	..	..	2	7	2
Total....	38,977.8	1,634,508	41.9	6	..	7	2	10	155	54	43	120	1,549	390

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BOROUGH OF THE BRONX.

Wards.	Area in Acres.	Population, U. S. Census 1910.	Number of Persons to the Acre.	Typhoid Fever.	Smallpox.	Measles.	Scarlet Fever.	Diphtheria and Croup.	Pulmonary Tuberculosis.	Lobar Pneumonia.	Broncho-Pneumonia.	Diarrhoeal Diseases.	All Causes.	Deaths of Children Under 5 Years.
23	4,267.0	268,880	63.0	..	..	..	..	3	28	3	4	16	296	62
24	22,255.8	162,062	7.3	..	..	..	1	2	19	5	7	10	195	30
Total.	26,522.8	430,942	16.2	..	..	..	1	5	47	8	11	26	491	92

BOROUGH OF QUEENS.

1	4,650.0	61,763	13.3	..	..	1	..	2	6	..	..	10	61	15
2	14,700.0	105,219	7.2	..	..	..	..	2	8	1	3	4	88	23
3	22,000.0	37,171	1.7	..	..	..	1	2	6	..	..	2	70	13
4	36,600.0	67,412	1.8	1	..	..	..	3	9	2	..	4	106	18
5	3,770.0	12,476	3.3	..	..	..	..	..	2	..	..	3	43	8
Total.	81,720.0	284,041	3.5	1	..	1	1	9	31	3	3	23	368	77

BOROUGH OF RICHMOND.

1	3,340.0	27,201	8.1	..	..	..	1	..	6	1	2	..	38	5
2	4,130.0	16,871	4.1	..	..	..	..	1	3	..	..	1	29	5
3	10,050.0	19,812	2.0	..	..	..	..	..	1	1	..	3	29	6
4	8,180.0	10,662	1.3	..	..	..	..	..	..	..	..	1	20	1
5	10,900.0	11,423	1.0	..	..	..	..	..	1	..	..	..	11	2
Total.	36,600.0	85,969	2.3	..	..	..	1	1	11	2	2	5	127	19

DEATHS ACCORDING TO AGE GROUPS, JULY, 1920

Boroughs.	All Ages.	Under 1 Year.	1 Year and under 2.	Under 5 Years.	5-15 Years.	15-25 Years.	25-45 Years.	45-65 Years.	65 Years and over.	Colored.	Chinese.
Manhattan.	2,031	410	66	552	99	107	375	540	358	197	8
The Bronx..	491	62	11	92	29	28	90	145	107	11	..
Brooklyn...	1,549	282	49	390	75	107	261	415	301	47	..
Queens.....	368	52	5	77	16	37	70	103	65	13	3
Richmond..	127	15	2	19	8	8	25	26	41	2	..
City of N.Y	4,566	821	133	1,130	227	287	821	1,229	872	270	11

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INFECTIOUS DISEASES.

Number of Cases Reported in the City of New York, by Boroughs, During July, 1920, and July, 1919.

	Manhattan.		The Bronx.		Brooklyn.		Queens.		Richmond.		City.	
	July		July		July		July		July		July	
	1920	1919	1920	1919	1920	1919	1920	1919	1920	1919	1920	1919
Typhoid Fever	45	32	3	9	25	30	4	4	1	2	78	77
Typhus Fever	....	1	....	....	....	....	...	...	...	...	....	1
Malaria	4	8	....	....	4	4	...	1	...	...	8	13
Small Pox	5	....	....	....	....	....	...	...	...	...	5	....
Measles	130	234	29	35	112	54	4	26	19	6	294	355
Scarlet Fever	80	51	38	21	60	46	23	25	7	3	208	146
Whooping Cough	362	50	92	29	192	94	53	8	...	3	699	184
Diphtheria and Croup	394	421	78	117	217	184	116	66	12	12	817	800
Leprosy	....	....	....	....	....	....	...	...	...	...	....	....
Mumps	73	66	40	25	22	31	21	6	2	1	158	129
German Measles	16	10	6	....	23	3	4	...	...	...	49	13
Chicken Pox	121	112	28	21	48	39	12	11	18	4	227	187
Glanders	....	....	....	....	....	....	...	...	...	...	....	....
Anthrax	2	....	....	....	....	....	...	...	...	...	2	....
Rabies	....	....	....	....	....	....	...	1	...	...	....	1
Tetanus	1	1	....	....	....	....	...	1	...	...	1	2
Pellagra	....	....	....	....	....	....	...	...	...	...	....	....
Pulmonary Tuberculosis	502	369	76	140	325	334	22	13	19	13	944	869
Other Tuberculous Diseases	....	....	....	....	....	....	...	...	...	...	....	....
Syphilis	1,069	782	162	81	512	256	42	32	38	10	1,823	1,161
Gonorrhoea	141	143	34	21	193	128	15	5	11	6	394	303
Cerebro-Spinal Meningitis	9	15	2	3	3	6	1	...	2	1	17	25
Poliomyelitis	5	....	....	....		...	4	...	...	...	10	....
Hookworm	....	....	....	....	....	....	...	...	...	...	....	....
Trichinosis	....	....	....	....	....	....	...	...	...	...	....	....
Influenza	5	....	2	13	....	2	2	...	...	...	9	15
Pneumonias	145	....	21	17	73	12	15	...	4	4	258	33
Total	3,109	2,295	611	532	1,810	1,223	338	199	133	65	6,001	4,314

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MONTHLY METEOROLOGICAL SUMMARY.

JULY, 1920

Date.	Temperature. Degrees Fahrenheit.)				Relative Humidity. (Per Cent.)	Precipitation (Inches.)		Wind. (Miles per hour.)			Sunshine.
	Maximum.	Minimum.	Mean.	Departure of Mean from Normal.	8 a.m.	Rain.	Snow.	Average Velocity.	Prevailing Direction.	Maximum Velocity and Direction.	Number of Hours.
T 1	81	68	74	+ 2	66	0	0	13.6	N	22 NW	15.1
F 2	79	64	72	0	68	.35	0	16.8	S	34 S	11.9
S 3	75	62	68	— 4	97	1.30	0	15.0	N	33 SE	5.4
S 4	73	63	68	— 4	68	0	0	25.3	NW	52 NW	14.6
M 5	76	59	68	— 5	78	0	0	31.6	NW	43 NW	14.1
T 6	80	64	72	— 1	65	0	0	14.5	S	35 S	15.0
W 7	78	66	72	— 1	81	.04	0	22.2	S	38 S	9.7
T 8	81	68	74	+ 1	78	0	0	16.8	W	28 NW	15.0
F 9	83	69	76	+ 3	69	.01	0	11.5	S	28 S	13.1
S 10	87	69	78	+ 5	64	0	0	8.3	N	16 S	13.2
S 11	80	68	74	+ 1	89	0	0	8.2	SE	13 S	7.4
M 12	81	65	73	0	90	.42	0	20.8	S	46 NW	8.2
T 13	88	67	78	+ 4	67	0	0	13.4	SW	29 S	14.9
W 14	87	68	78	+ 4	99	.16	0	16.4	S	60 W	8.8
T 15	80	69	74	0	93	.13	0	12.4	SW	28 SW	6.1
F 16	78	65	72	— 2	57	0	0	10.5	NW	25 NW	14.4
S 17	77	62	70	— 4	53	0	0	8.8	N-NW	21 N	14.8
S 18	72	66	69	— 5	75	.05	0	15.2	SE	32 SE	6.8
M 19	82	68	75	+ 1	86	.32	0	23.2	SW	57 NW	6.1
T 20	82	67	74	0	67	0	0	12.5	NW	23 NW	14.1
W 21	83	68	76	+ 2	62	0	0	11.2	SW	28 SW	14.7
T 22	85	68	76	+ 2	77	.29	0	10.2	S	40 SW	4.5
F 23	82	66	74	0	90	.36	0	14.3	SW	33 SW	8.8
S 24	87	65	76	+ 2	88	1.11	0	25.9	SW	50 NW	8.9
S 25	76	58	67	— 7	70	0	0	16.8	NW	34 NW	9.8
M 26	70	55	62	—12	62	0	0	16.5	N	24 NW	13.1
T 27	76	56	66	— 8	67	0	0	11.0	N	18 N	14 5
W 28	82	62	72	— 2	66	0	0	8.2	NE	20 S	14.2
T 29	80	63	72	— 2	58	0	0	17.0	S	31 S	14 4
F 30	82	62	72	— 2	82	T	0	18.6	SW	33 SW	12.7
S 31	86	67	76	+ 2	75	.24	0	16.5	SW	44 NW	8.7
Month	Mean 80.3	Mean 64.7	Mean 72.5	Blank	M'n 74	Total 4.78	Total 0.0	Mean 15.3	Prev'l'g S	Blank	Total 353.0
Normal	82.1	66.8	73.5	Blank	75	4.54	0.0	9.4	S	Blank	Possible 458.3

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DIRECTORY OF DEPARTMENT OF HEALTH.

OFFICES.

Headquarters: 505 Pearl Street, Manhattan.....Telephone, 9400 Worth
Borough of The Bronx, 3731 Third Avenue.....Telephone, 1975 Tremont
Borough of Brooklyn, Flatbush Avenue and Willoughby Street.....Telephone, 4720 Main
Borough of Queens, 372-374 Fulton Street, Jamaica, L. I.....Telephone, 1200 Jamaica
Borough of Richmond, 514-516 Bay Street, Stapleton, S. I.....Telephone, 440 Tompkinsville
Office Hours—9 a. m. to 5 p. m.; Saturdays, 9 a. m. to 12 m.

HOSPITALS FOR CONTAGIOUS DISEASES.

Manhattan—Willard Parker Hospital, foot of East 16th Street. Telephone, 1600 Stuyvesant.
The Bronx—Riverside Hospital, North Brother Island. Telephone, 4000 Melrose.
Brooklyn—Kingston Avenue Hospital, Kingston Ave. and Fennimore St. Telephone, 4400 Flatbush.
Queens—Queensboro Hospital, Flushing Ave. and Lotts Lane. Telephone, 2600 Jamaica.

LABORATORIES.

Diagnosis Laboratory, Serological Laboratory, 505 Pearl Street. Telephone, 9400 Worth.
Research Laboratory, Chemical Laboratory, Vaccine Laboratory, foot of East Sixteenth Street. Telephone, 1600 Stuyvesant.
Antitoxin Farm and Laboratory, Otisville, N. Y.

BABY HEALTH STATIONS.

Manhattan.

1.	172 East 3d St.	8.	224 West 63d St.	15.	348 East 74th St.	22.	73 Cannon St.
2.	513 East 11th St.	9.	326 East 11th St.	16.	205 East 96th St.	23.	95 Suffolk St.
3.	306 Avenue A.	10.	114 Thompson St.	17.	209 Stanton St.	24.	206 Madison St.
4.	443 1st Ave.	11.	315 East 112th St.	18.	343 Pleasant Ave.	25.	214 Monroe St.
5.	225 East 107th St.	12.	244 Mulberry St.	19.	108 Cherry St.	26.	289 Tenth Ave.
6.	241 East 40th St.	13.	508 West 47th St.	20.	197 Hester St.	27.	95 Forsyth St.
7.	174 Eldridge St.	14.	78 Ninth Ave.	21.	27 Suffolk St.	28.	2155 Fifth Ave.

Brooklyn.

1.	268 South 2d St.	7.	359 Manhattan Ave.	13.	604 Manhattan Ave.	19.	698 Henry St.
2.	621 Fourth Ave.	8.	49 Carroll St.	14.	179 Bedford Ave.	20.	594 Sutter Ave.
3.	208 Hoyt St.	9.	76 Johnson Ave.	15.	296 Bushwick Ave.	21.	167 Hopkins St.
4.	144 Navy St.	10.	233 Suydam St.	16.	994 Flushing Ave.	22.	592 Park Ave.
5.	2346 Pacific St.	11.	323 Osborn St.	17.	176 Nassau St.	23.	165 Ten Eyck St.
6.	184 Fourth Ave.	12.	107 Dupont St.	18.	129 Osborn St.	24.	49 Amboy St.

The Bronx.

1. 511 East 149th St. 2. 428 East 133d St. 3. 354 Webster Ave. 4. 2380 Hughes Ave.

Queens.

1. 114 Fulton Ave., Astoria. 2. 22 Maspeth Ave., Maspeth. 3. 753 Onderdonk Ave., Ridgewood

Richmond.

689 Bay Street, Stapleton, S. I.

CLINICS FOR VENEREAL DISEASES.

ADVISORY CLINICS.

Manhattan.

Main Clinic, 505 Pearl Street..... Week days, 9 a. m. to 12 M.

Brooklyn.

Prospect Clinic, Fleet and Willoughby Streets..... Daily except Sunday, 9 a. m. to 12 noon.
Monday and Friday, 8 p. m. to 9 p. m.

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CLINICS FOR VENEREAL DISEASES—ADVISORY CLINICS—Continued

TREATMENT CLINICS.

Manhattan.

Chelsea Clinic, 307 West 33d Street..... { Monday and Friday, 9 a. m. to 12 noon.
Wednesday and Friday, 7 p. m. to 10 p. m.

Brooklyn.

Prospect Clinic, Fleet and Willoughby Streets..... { Daily except Sunday, 9 a. m. to 12 a. m.
Monday and Friday, 8 p. m. to 9 p. m.

ANTI-RABIC CLINICS.

Manhattan—505 Pearl Street. Telephone, 9400 Worth. Week days, 1 to 4 p. m.

Brooklyn—Fleet and Willoughby Streets. Telephone 4720 Main. Week days, 10 a. m. to 1 p. m. Sundays and holidays, 10 a. m. to 12 m.

The Bronx—Third Avenue and St. Paul's Place. Tel., 1975 Tremont. Week days, 11 a. m. to 1 p. m.

Queens—Patients attend Brooklyn or Manhattan Clinic.

Richmond—Patients attend Manhattan Clinic.

On Sundays and holidays patients of all Boroughs attend Brooklyn Clinics. Hours on these days, 10 a. m. to 12 noon.

Immunization against typhoid fever will be given on request at these clinics.

OCCUPATIONAL CLINICS.

Manhattan—128 Prince Street. Week days, 9 a. m. to noon. Telephone, 9586 Spring.

The Bronx—493 East 139th Street. Week days, 2 to 4 p. m. Telephone, 6399 Melrose.

Brooklyn—Fleet and Willoughby Streets. Week days, 2 to 4 p. m. Telephone, Main, 4720.

Queens—Jamaica, 372-374 Fulton Street, Jamaica, 2 to 4 p. m.; Saturday, 9 to 12 noon. Telephone 1200 Jamaica.

Corona, 127 46th Street (near Alburtis Avenue "L" Station), 2 to 4 p. m.; Saturday, 9 to 12 noon. Telephone, 3255 Newtown.

Ridgewood, 753 Onderdonk Avenue, Ridgewood, 2 to 4 p. m.; Saturday, 9 to 12 noon. Telephone, 3624 Evergreen.

Queens Plaza, 138 Hunter Avenue. Telephone, 2589 Astoria.

Richmond—Richmond Bay and Elizabeth Street, Stapleton, 2 to 4 p. m.; Saturday, 9 to 12 noon. Telephone, 1558 Tompkinsville.

DIVISION OF NARCOTIC REGISTRATION AND NARCOTIC RELIEF STATION.

Manhattan—145 Worth Street. 2 to 8 p. m. daily except Sunday and holidays.

BRANCH OFFICES AND TUBERCULOSIS CLINICS.

Manhattan—Corlears, 331 Broome Street. Telephone, 7914 Orchard.
Stuyvesant, 540 East 13th Street. Telephone, 2859 Orchard.
Yorkville, 439 East 57th Street. Telephone, 2526 Plaza.
Jefferson, 341 Pleasant Avenue. Telephone, 2375 and 828 Harlem.
Riverside, 481 West 145th Street. Telephone, 9068 Audubon.
Chelsea, 307 West 33d Street. Telephone, 3471 Greeley.
Washington, 130 Prince Street. Telephone, 9586 Spring.
Day Camp, Ferryboat "Manhattan," foot East 90th Street. Telephone, 1581 Lenox.

The Bronx—Tremont, St. Paul's Place and Third Avenue. Telephone, 1975 Tremont.
Mott Haven, 493 East 139th Street. Telephone, 5702 Melrose.

Brooklyn—Prospect, Fleet and Willoughby Streets. Telephone, 4720 Main.
Eastern District, 306 South 5th Street, Williamsburg. Telephone, 1982 Stagg
Bedford, 420 Herkimer Street. Telephone, 2220 Decatur.
Brownsville, 64 Pennsylvania Avenue. Telephone, 2732 East New York.
Bay Ridge, 215 60th Street. Telephone, 2434 Sunset.
Day Camp, Ferryboat "Rutherford," foot of Broadway. Telephone, Williamsburg, 5223.

Queens—Jamaica, 372-374 Fulton Street, Jamaica. Telephone, 1200 Jamaica.
Corona, 127 46th Street (near Alburtis Avenue "L" Station). Telephone, 3255 Newtown.
Ridgewood, 753 Onderdonk Avenue, Ridgewood. Telephone, 3624 Evergreen.
Queens Plaza, 138 Hunter Avenue. Telephone, 2589 Astoria.

Richmond—Richmond, Bay and Elizabeth Streets, Stapleton. Telephone, 1558 Tompkinsville.

HOSPITAL DIAGNOSIS STATION.

Manhattan—128 Prince Street. Hours, 2 to 4 p. m., Tuesday, Thursday, Saturday.

SANATORIUM FOR TUBERCULOSIS.

Otisville, Orange County, N. Y. (via Erie Railroad from Jersey City). Telephone, 13 F 1 Otisville.

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M.E.C.

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MONTHLY BULLETIN OF THE DEPARTMENT of HEALTH CITY OF NEW YORK

Public health is purchasable. Within natural limitations a community can determine its own death rate.

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ROYAL S. COPELAND, M. D., Commissioner of Health.

VOL. X. SEPTEMBER, 1920. No. 9.

SCHOOL MEDICAL INSPECTION IN NEW YORK CITY DURING 1919.

By S. JOSEPHINE BAKER, M. D., *Director.*

and

JACOB SOBEL, M. D., *Assistant Director,*

Bureau of Child Hygiene.

Medical Inspection.

During the year a list of children from families in which there was a case of tuberculosis has been regularly furnished to the Bureau of Child Hygiene, by the Bureau of Preventable Diseases, and every effort has been made to place the children of these families in an open-air class, when there was a school with such a class sufficiently near.

Every effort was made to prevent a recrudescence of influenza cases among school children. Five hundred thousand (500,000) circulars on the prevention of colds and influenza were distributed. During February and March every Friday was devoted by medical inspectors to the examination of pre-school-age children. This led to the detection of a number of defects among these children and every effort was made by the inspector and nurse to have them corrected.

The retirement of one supervising inspector on March 1, from the Borough of Manhattan service, led to the doubling up of supervision upon two full-time men, and the work was carried on by these two men throughout the year. On account of the dropping of a number of inspectors, through lack of budget appropriation, the schools were regrouped, in order to cover all schools as fully as possible.

A list of schools in which there were a number of poor families, and where the degree of malnutrition was high, was submitted to the Chief of the Division of School Inspection, in order, if possible, that milk might be furnished to the children therein.

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A special nutrition survey was made in forty-three (43) schools, and there were found of the

No. 1 cases	9,636
No. 2 cases	38,493
No. 3 cases	17,571
No. 4 cases	4,884

with a percentage ranging from 17 to 61 of malnutrition, and a general average of 32%.

No. 1 Case—Represents children in excellent condition.

No. 2 Case—The average normal child.

No. 3 Case—Those requiring supervision for malnutrition.

No. 4 Case—Those with organic trouble, or otherwise requiring medical care for the malnutrition from which they are suffering.

The results by ages, show that there were, in the

Kindergarten	40% malnutrition
1st year	43% malnutrition
2d year	40% malnutrition
3d year	37% malnutrition
4th year	37% malnutrition
5th year	35% malnutrition
6th year	32% malnutrition
7th year	26% malnutrition
8th year	22% malnutrition
9th year	21% malnutrition

A survey to determine the relation of the high cost of milk to its decreased use, and, consequent under-nourishment of young children, was instituted. Some ten thousand (10,000) families, were visited by inspectors of the Department, in selected sections. Families where there were one or more children between the ages of one and six were chosen. The survey was instituted to show how much milk of the various grades is used at the present time in comparison to 1916, before the increase in price, and also, whether any of the children of this age-group, are suffering from malnutrition, owing to the use of less milk.

A number of visitors from all over the world have inspected the school work during the course of the year and have written various letters to the Director and others, showing their appreciation of the work and its value.

New physical record cards were placed in many of the schools, and the inspectors and nurses were advised to use these as much as possible in their examination of the children, so as to save the loss of a large number of previous examinations through destruction of the old card, without its having been properly copied.

During the course of the year it was reported that an increase in the number of cases of scabies had occurred. This was found to be so to a certain extent. It was believed, but not thoroughly demonstrated, that the cases had been caused by a large number of returned soldiers from abroad, who suffered with mild types of the disease.

A large amount of social service work was done by the nurses throughout the year in taking care of familiies in their districts. All nurses became particularly active around Thanksgiving and Christmas time, providing suitable cheer in the way of good food and proper clothing for worthy families.

There was a notable increase in the number of cases of measles during the last quarter of the year. Every effort was made to see that the teachers sent down to the nurse and inspector, cases showing initial symptoms of the disease. Rooms in which two or more cases occurred were thoroughly scrubbed and aired, as a possible aid in

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the prevention of more cases, and such classes were routined regularly for a period of two weeks, in order to note early symptoms in other children and exclude them.

Chickenpox and diphtheria also showed an increase, but careful watching seemed to reduce rapidly the number of infections from these.

General Contagious Diseases Found in Schools and Excluded.

There were found in the schools and excluded during the year 1919, 1,846 cases of general contagious diseases; this is 149 more than for 1918, when there were 1,697. Every effort was made to detect contagion in its early stages, so as to place the child under observation of a physician as soon as possible, and to obviate the loss of a larger number of school days than is absolutely necessary. To facilitate this work, teachers were from time to time instructed by medical inspectors and nurses in the signs and symptoms of contagious diseases, and urged to send to the nurse or doctor as soon as they noticed any child who did not appear to be entirely normal. The number of cases excluded from school is rapidly falling off, and it is felt that this co-operation of the teacher, nurse and doctor has a great deal to do with it.

The reported "Cases of Major Contagious Diseases Found at Home" have fallen off because the parents are learning to know that, while the teacher is anxious to keep up her attendance, absence for a contagious disease will not count against her class. Most of them now also realize that the reporting of a case does not mean its removal to a hospital, and understand that it is safer for all concerned that cases should be reported, so that quarantine can be established, rather than to leave them alone and to serve as a source of infection in the neighborhood. There were found on "home visit" only 95 unreported cases of major contagious diseases during 1919, while in 1918 there were 368.

Contagious Eye and Skin Diseases Found in Schools.

There is an apparent increase in contagious eye and skin diseases found in schools. In 1919 there were 237,437, and in 1918 there were 209,991. This is due to the fact that at the first sign of any minor contagion or eye trouble, most teachers to-day send the child to the nurse who promptly institutes treatment, or sends it to a suitable clinic or its private physician.

The number of pediculosis cases especially has increased, because a number of principals have asked that extra attention be given this condition, and that children with only a few nits, who might possibly have escaped in previous years, be recorded on the class index cards, so as to eliminate, as far as possible, the danger of any further infection by getting every single child under proper treatment. Splendid co-operation has been afforded the nurse by the school principals and teachers, in a very serious endeavor to diminish the number of these cases.

The number of cases of trachoma has declined from 2,052 in 1918 to 1,675 in 1919.

Follicular conjunctivitis has dropped from 864 in 1918 to 128 in 1919.

Acute conjunctivitis has dropped from 13,697 in 1918 to 12,457 in 1919.

There has been an increase in the number of ringworm cases from 3,474 in 1918 to 4,190 in 1919.

Scabies increased from 1,795 in 1918 to 2,840 in 1919.

Impetigo increased from 11,239 in 1918 to 15,264 in 1919.

Various miscellaneous disorders have increased from 57 in 1918 to 357 in 1919. This is due to the fact, as previously stated, that more attention is being paid by the teachers to these conditions during morning inspection than in prevous years.

There was also an increase in the number of exclusions for these minor contagious diseases, from 10,925 in 1918 to 12,384 in 1919. It has been found in a number of instances that to exclude a child occasionally in a school has a good effect on others, and that treatment for many cases can thus be more rapidly secured.

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The visits and consultations by inspectors have fallen off considerably during the year, as so much of their time has been taken up with special surveys and investigations. A total of 37,677 visits were made by the inspectors in 1919, in contrast with 60,622 in 1918. As a matter of fact, there were less visits for physical defects required by the inspectors, because the nurses could make most of these. This was due to the fact that the inspectors made a lesser number of physical examinations during the year, so that each nurse had no more pupils with physical defects than she could herself look after.

In 1918 there were 10,781 visits made to contagious diseases by the inspectors, while in 1919 there were only 4,307. This is to a large extent accounted for by the fact that there were less unreported cases of contagious diseases in 1919 than in 1918.

The nurses made a total of 288,158 visits in 1919, as contrasted with 287,347 in 1918. This is a very splendid showing, when it is considered that part of their time, too, was taken up with special work.

The inspectors held 18,142 consultations in schools in 1919 and 19,827 in 1918.

The nurses held 121,813 consultations in 1919 and 116,247 in 1918. This also shows excellent work on the part of the nurses.

Vaccinations.

Vaccinations performed in the schools in 1918 amounted to 23,926, while but 19,828 were performed in 1918; 1,459 re-vaccinations were performed in the schools, as against 1,297 in 1918. Medical inspectors of this division also performed a large number of vaccinations at the baby health stations during the months of May and June and assisted in the performance of some at the borough offices, during the rush periods.

Examinations for Physical Defects.

The number of children examined compares very favorably with that of 1918:

Regular Examinations:

	1919.	1918.
Number examined	248,978	247,735
Number found with defects other than of teeth only..	91,268 (36.6%)	86,311 (34.8%)
Number found with defects of teeth, as only defect..	92,812 (37.3%)	104,587 (42.2%)
Other Examinations:		
Re-examinations	85,570	94,304

Cases Terminated.

It has not been found possible to terminate as many cases in 1919 as in 1918, on account of the lessened number of physicians at the various hospitals and clinics, and the fact that the price of treatments has gone up markedly.

	1919.	1918.
Received treatment:		
Defects of teeth only	7,660	12,605
Associated defects	41,484	52,690
Refused treatment:		
Defects of teeth only	877	1,379
Associated defects	2,647	4,423
Left school:		
Defects of teeth only	941	1,096
Associated defects	3,657	4,245

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	1919.	1918.
Summary of Regular Examinations for Physical Defects:		
Number of children examined	248,978	247,735
Number found to have defective vision	17,895 (7.2%)	23,362 (9.4%)
Number found to have defective hearing	1,252 (.5%)	1,214 (.4%)
Number found to have defective nasal breathing	28,986 (11.6%)	25,168 (10%)
Number found to have hypertrophied tonsil	38,151 (15.3%)	33,475 (17.5%)
Number found to have cardiac disease	3,798 (1.5%)	3,979 (1.2%)
Number found to have pulmonary disease	689 (.3%)	742 (.2%)
Number found to have orthopedic defects	2,243 (.9%)	1,989 (.7%)
Number found to have nervous affections	1,407 (.6%)	1,504 (.6%)
Number found to have defective teeth	155,218 (62.3%)	161,686 (65.2%)
Summary of Cases Terminated:		
Defects of vision corrected by glasses	8,787 (49.1%)	12,040 (51.5%)
Defective nasal breathing corrected by surgical means	5,836 (20.9%)	5,543 (22.0%)
Hypertrophied tonsils corrected by surgical means	7,276 (19.0%)	6,809 (20.3%)
Orthopedic defects corrected by surgery	18 (.8%)	49 2.5%)

The results achieved in the number of cases terminated with actual treatment compare favorably, indeed, with those of 1918 and preceding years.

Health Leagues.

The work among these leagues has not been particularly encouraging during the year. There have been so many changes in nurses groups, and so much other work to be attended to, not only by the nurse, but by the teacher, who has had to double up the number of children in her class and prepare for pageants, drives, and the like, that it has not been possible to secure the co-operation of the teaching force, nor the attention of the children for concentrated work of this kind. An endeavor has been made, of course, to keep as many leagues going as possible, but, with the exception of one or two instances, the result achieved has not been brilliant.

Miscellaneous School Activities.

Every endeavor has been made to increase the number of parents present when the children are examined. Notes were sent to them by teachers of kindergarten and 1-A classes, consultation slips have been sent by the nurses, and yet the number present has not been at all satisfactory. It has been found that a large number of the parents, especially in the poorer districts, work, and therefore cannot take the time to attend. In the better districts the parents do not attend on account of social and other duties. They seem to feel that the examinations made by the doctor are good, and in many instances accept his recommendations and get their child under treatment.

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More and more co-operation is being established between teachers, principals, district superintendents, parents' associations and the school doctors and nurses. In some districts the nurse can get almost anything that she requires, from the people in the district. In some districts, too, the school authorities and parents look upon the inspector as a real medical advisor, and come to him to discuss their various troubles and ask advice from him. It is the constant endeavor of the nurse to increase the number of visits to dispensaries by children who cannot afford to pay a private physician. Very often, when the parents cannot attend with the children, the nurse will gather a group about her some morning, or afternoon, and take them all to a neighboring clinic for treatment.

The arms of all children admitted to school for the first time are examined by the medical inspector for vaccination scar. If none is apparent, the principal is so advised and requested to see that the child secures proper vaccination. Principals have also been advised of the vaccination law so that they may instruct their clerks to secure proper vaccination certificates from children, other than those entering school for the first time.

Not much can be done to lessen the number of children whose vision is not tested at the first examination. The picture and object charts advocated by some are not efficient in detecting defects of sight. The shadow test should be used on all children entering school for the first time. There are difficulties, however, in the way of performing this test by the inspector, which have as yet not been overcome.

Various sight defects are discussed with the teacher when the doctor looks over the class. She is requested and encouraged to send down to the doctor, for more complete examination, any child with "squint" who seems to strain in looking at objects, or who hold them too close to or too far away from the eyes. The percentage of children who obtain glasses for defective vision is constantly increasing. This is due to the fact that children wearing glasses are no longer looked upon as a rarity in the City, and therefore their friends do not make so much fun of them as formerly. They are therefore more willing to secure them and to wear them. Then, too, the parents have learned, through the instructions of the nurses and doctors, of the danger of neglecting defective vision and are more willing to take their children for suitable examination.

In many cases funds are provided, sometimes by the principals, more often by the nurse, with which to secure glasses for those children whose parents are unable to pay for them.

Every effort is made by the nurses to secure effective treatment for defects such as mouth breathing, decayed teeth and hypertrophied tonsils. The nurses visit the social service agencies of the hospitals or clinics in their district, and by doing favors, such as securing family histories or other data required for the work of the former, will, in turn, secure beds and operative facilities for tonsils, teeth, adenoids, or examinations for defective vision, through the influence which the social service department is able to exert upon the medical staff. The nurses also, in this way, very often secure free treatment for cases that could not otherwise be treated.

It has not been possible to do much in the way of establishing nutrition classes. A number of principals though have been interested in the work for defective nutrition, especially when they have been informed that there is a high percentage of malnutrition in their school. They have held parents' meetings, to which a doctor and nurse have been invited to be present, to discuss the feeding and care of children, and have assigned a special teacher to assist the nurse in instructing parents in the proper preparation of food and the kinds of food to give.

No special efforts have been made to establish cardiac classes. Requests have come from certain principals to examine certain pupils in their school, who were sup-

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posed to be suffering from that disease. These children have been examined. Where cardiac conditions have been found, the children and parents have been instructed and the teacher advised as to the proper care of the child.

Doctors and nurses have attended many parents' meetings for the instruction of mothers and fathers in the care and bringing up of their children. Some of these meetings have been very largely attended and the interest displayed evidences the fact that the effort made to bring the parents together for work of this kind was well worth while.

Toothbrush drills have been given regularly throughout the year; at least twice a term to every child in the school, but more often in the lower grades. Toothpaste furnished by one of the largest manufacturing concerns has been given to the child as a reward for proper care of the teeth. Some of the nurses have purchased toothbrushes wholesale, so that all the children in the school could be supplied.

Through parents' associations, welfare organizations, neighborhood houses and agencies a number of the nurses have been able to secure milk and, in some cases, lunches for needy children. Many of the parents have been surprised to learn that their children have been drinking milk in school, and it has been much easier to impress them with the fact that they should have it at home, and that the children will take it.

Several neighborhood houses have established lunches for worthy children, where they are served a hot noonday meal, at a cost not exceeding five or ten cents. In many of the open-air classes the children bring a penny or two a day, and this is sufficient to provide them with milk and cereals. Some of the nurses have held bazaars at which they have made quite large sums of money. The health leagues in the schools have helped make these bazaars a success, or in other ways co-operated in obtaining money, not only for milk and lunches, but also for shoes, eye-glasses and other necessities for worthy children.

All of the hospitals and dispensaries have been canvassed in order to obtain special concessions for school children. Many of them set aside a definite time when a nurse may bring children to the clinic for treatment. Many of them, too, will remit the fee for medicine or operation, if the child is sent with a note, stating that it is a worthy case.

In order to detect, eliminate and prevent the spread of contagion, teachers have regularly been instructed in the detection of early signs and symptoms of the contagious diseases. They have been instructed to send to the doctor or nurse any child showing signs of fever, flushed face, rash, pallor, or apparently suffering from gastric or other disturbance. An endeavor has been made to see that the daily list of contagious diseases is sent through the schools regularly each day, and that the teacher notes in the record book any child absent from her class on account of contagious disease, or in whose family there is such a case. A list of absentees is furnished the medical inspector daily, by the principal, of cases where it is suspected that contagious diseases may be existent in the home. Wherever two or more cases of the same disease appear in a classroom, the class is "routined" (inspected) regularly by the doctor and the nurse until the period of incubation, following the last case, has passed. In the case of diphtheria, cultures are taken—if the infection of the second case appears to have come from the first. Parents are advised to have the Schick test performed on their children, so that it may be determined whether or not they are susceptible to diphtheritic infection, and immunization is also offered when considered advisable.

When it comes to the question of pediculosis, one feels that the problem is rather one to be "dissolved" than solved. Could the chemist provide us with something that would loosen the nits from the hair and yet not injure it, this problem

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would be greatly lessened. As it is at the present time, many formulae and methods are used in order to attempt to keep down the number of these cases. The problem has become so important, and apparently so lucrative, that a number of women in this city have gone into the business of freeing children's heads from pediculosis. In the schools, more and more of the principals are coming to see the importance of this problem. A number of them now refuse to promote or to graduate children from their schools, whose heads are unclean. In the classroom they are segregated, being put in aisles by themselves. They are not allowed to wear hair ribbons; receive a "C" or lower mark in hygiene in many of the schools, and the percentage of the class itself is marked low, if there are cases of unclean heads in it.

The health leagues have also helped in the problem of cleaning up, the girls taking a special interest in the welfare of their school, and feeling that it is a disgrace to have cases of this kind in any class.

Little Mothers' Leagues.

Little Mothers' Leagues in schools should be conducted throughout the year by the teachers themselves in the schools. It should not be a part of the nurse's duties to give definite instructions for a period of time to the scholars. Lessons should be arranged by the teachers, and occasionally the nurse and inspector should be called in to talk to the children on these topics; the work being part of the school curriculum, the same as cooking and sewing, would have to be undertaken by all the girls of twelve years of age or over, and the results achieved would be in proportion to the number taught by the teacher and those now taught by the nurse.

Of course, it is realized that this policy cannot be adopted just now, as it must be passed upon by the Board of Education. In order, therefore, to make the lessons as effective as possible at the present time, they should be begun in March or April, so that as many lessons as possible can be given by the nurse during the school period. Principals should be spoken to by the supervisors and shown the value of the work, in order that they may co-operate, possibly assigning a teacher to assist the nurse in maintaining discipline and noting that all girls twelve years of age and over attend meeting regularly.

On account of the small number of nurses assigned to the Bureau, it is rather difficult to continue the leagues throughout the entire summer, as they require nurses who are especially fond of children, who know how to handle them, and who will take a particular interest in this sort of work.

The children also become restless during the summer period and unless they are taken on trips and excursions occasionally, and offered rewards and prizes for their attendance, they soon drop out of the league, and it has to be disbanded.

The fact that a new nurse must be assigned to take care of the league when their own school nurse goes on vacation, also is a factor in diminishing the attendance; the girls not knowing the new nurse, and not knowing how she is going to act towards them, do not care to attend.

It will be well, therefore, in the latter part of July, to merge the school league with the nearest baby health station league, if there is one in the vicinity, so that the girls can be interested in the demonstration work and the actual care of babies at the stations. Girls who attend regularly should be provided with a little ornate certificate or diploma, showing that they have attended regularly and have completed the required course of instruction.

Co-operation of the Department of Education.

The adoption of the "Syllabus of Hygiene" by the Department of Education has worked great good in getting more co-operation in health work by teachers. A greater number of cases have been referred by teachers for examination, although

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it is true that a large percentage of these are found by the doctors to have nothing the matter with them. In some schools where the principals are particularly interested in the work, the teachers pay great attention to the condition of their children, and materially assist the nurses in cleaning them up, and in the correction of physical defects. In other schools, however, the teachers simply refuse to do the work called for in the syllabus, and no more cases are referred than formerly.

In some of the schools the teachers have carried out the provision relating to the testing of eyesight with the Snellen chart. The large number of children however, found defective by the teacher, show that they have not been properly instructed. A number of children marked with vision as high as 20/70ths and 20/100ths, have been found, upon re-examination by an inspector, to have normal vision.

Many of the teachers seem to be more careful than formerly in referring minor contagious cases and cases of illness to the doctor or nurse. This has resulted in some schools in, practically, the elimination of minor contagious diseases, such as ringworm, impetigo, scabies and the like.

General Impressions of the Year's Work.

The standard of personal cleanliness in the schools, on the whole, seems to be gradually improving. The nurses are constantly preaching "cleanliness" through their talks to the children in the classroom, through health leagues and through the Little Mothers' Leagues. Most teachers are glad to help in work of this kind, as they feel with dirty children in their classes they themselves cannot keep clean.

The stoppage of immigration, too, in keeping out the uneducated hordes of illiterate folk from Europe, who have not become used to our American methods of hygiene and sanitation, has given us time to work on those at present here and make them realize that cleanliness is really next to godliness.

The greatest deficiencies in our present system of early detecting, preventing and excluding children suffering from contagious diseases are the facts that teachers do not generally know the signs and symptoms of contagious diseases, and therefore do not detect them early enough to be of value. The daily list of contagious diseases does not always reach the schools to be sent through them in time for exclusion of other children in a family, and in some schools is not closely scanned by the teachers, in order to find children who should be out, or, perhaps, is not sent through the school at all by the principal. Teachers do not go over their list of absentees closely enough in order to ascertain, if possible, whether or not it is a contagious disease that is keeping the pupil out. Very often by a discreet inquiry in the classroom, or by sending for a brother or sister in the school, the teacher will be able to find, and to notify the department of, concealed cases of contagion.

The greatest obstacles in the way of procuring treatment for children suffering from physical defects are:

In the first place, the fact that there are, by no manner or means, sufficient facilities in the city for caring for all of the children whose parents are willing to have them treated. Clinics, hospitals and dispensaries are constantly overcrowded with school children applying for treatment; there are so many of these that the doctors cannot give them the proper time or care, and so the parents and children go away dissatisfied and do not return.

In the next place, the ignorance of parents in general helps to keep down the number who should have treatment. It is in many cases difficult and in some impossible to persuade a mother or father that a child should be operated upon for tonsil or adenoids, or secure glasses, and often, in many cases, that the teeth should have attention. Then, too, the child must be considered. It is surprising to note the large number of children who rule their parents, and if the child refuses to go for treatment

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the parent simply shrugs his or her shoulders, and says to the doctor or nurse, "What can I do?" In many instances, also, parents cannot afford to pay a private physician, and yet do not wish to take their children to the hospital, either from the fact that they do not wish to accept charity, or that they fear the hospital may keep the child and operate upon it, whether or not the parent wishes it. In some clinics, too, the charge for treatments has gone up so much that parents cannot afford these either. Private physicians' fees, in the majority of school children's cases, for special treatments, are practically prohibitive. Sometimes parents may be willing to take their children, but on account of their employment, find it impossible to do so.

Other Work by School Medical Inspection Personnel.

A great deal of work has been done by employees, doctors and nurses in the Division of School Medical Inspection for other bureaus, as well as other divisions in the Bureau of Child Hygiene, and also for outside agencies.

The Bureau of Records has been supplied with a medical inspector every other Sunday throughout the year; has been given relief, when their burial permit clerk has been ill or on vacation, for weeks at a time.

It has furnished to the Bureau of Preventable Diseases diagnosticians for work during the epidemic of influenza, as well as when their work in that bureau became heavy. The inspectors have given a number of talks on tuberculosis and other topics for the Bureau of Public Health Education.

To the Mercantile Division of this Bureau, doctors and nurses have been supplied during the rush periods. During the summer vacation paper rush period practically every doctor and nurse in the division was assigned to this work in the various school centres, in which these papers were issued.

Doctors and nurses were assigned to the Mayor's Committee boat "Correction" during the summer time, and also to the St. John's Guild.

A force, sufficient to cover the work, was assigned to the Drug Addict Clinic, when it was first opened, and continued there for a long period.

Doctors were assigned to the Baby Health Stations beginning in May and through June, to perform vaccinations for the large number of children applying therefor at that period.

Doctors were also assigned daily, for four days a week, in the Boroughs of Manhattan and Brooklyn, to the various truant centres to perform examinations on truants brought before the courts at these places.

Doctors and nurses were assigned to bring up to date a long list of delinquent visits to midwives and foundling keepers for the Division of Midwives and Foundlings.

The entire force of inspectors was assigned to the Commissioner's office to carry out the malnutrition survey for children between the ages of two and six years.

At the diet kitchen of the New York Diet Kitchen Association inspectors were assigned regularly every Saturday throughout the year, and for three days a week during the summer vacation period.

During a smallpox scare a number of inspectors were assigned to vaccinate in schools in the neighborhood in which the cases had occurred.

Practically all physical examination work was discontinued for a long period during which malnutrition surveys, asked for by the Board of Education, were being made and completed as rapidly as possible; thereafter the No. 3 and No. 4 cases found in these surveys were examined by the inspectors who had made them.

Eye Clinics.

The object of the eye clinics of the Bureau of Child Hygiene is:

First—The detection and treatment of all contagious eye diseases among school children, whose parents are unable to pay for private treatment.

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Second—The detection of errors of refraction and the correction of these errors. Refraction at these clinics is done by highly trained oculists of proven ability. In the usual eye clinic of the public hospital, the drudgery of refraction is, as a rule, left to the newest and least experienced assistant. It is now being realized by the medical profession, that the correct refraction of most children is a difficult problem, calling for a high degree of ability on the part of the oculist and the value of the work done in our clinics is being appreciated by doctors, teachers, and social workers in the general hospitals, who refer many cases to the clinics.

Third—The detection and supervision of the partially sighted and blind children, and the treatment of these cases.

The organization of the clinics is somewhat changed from that of last year, the executive officers being:

First—The Director of the Bureau, in full charge.

Second—The Assistant Director.

Third—The Borough Chiefs, who have administrative and disciplinary supervision of oculists and nurses.

Fourth—The Supervising Oculist in charge of all technical work in all Boroughs.

Fifth—The District Medical Supervisor, and Supervising Nurses, in charge of the oculists and nurses in their districts.

Sixth—The oculists and nurses assigned to each clinic to carry out the detail work. In addition to these the medical inspector and school nurse co-operate to the extent that all work in harmony to detect all eye cases in the schools and refer them to the clinic for treatment, as well as to look after the necessary follow-up work which is so important among the poorer classes.

There are ten eye clinics—six of these are in Manhattan, two in Brooklyn, one in the Bronx, and one in Queens.

The work done last year by the teachers in regard to vision testing has been continued this year with somewhat better results. This feature of the work is possible of great expansion if a working plan can be created whereby all children shall be given a vision test by the teacher at the beginning of each term. The test should be made in accordance with a set of simple rules for vision testing to be furnished by the Supervising Oculist.

The clinic and school nurses have done remarkably well during the past year in keeping the clinic active. There is, however, more assistance needed in the follow-up work in the homes in order to carry out the treatment prescribed in many cases, as we have a list of several hundred children whose cases have not been terminated, and the clinics have lost touch with them, due to their failure to keep the appointments made for them.

The success in the treatment of Trachoma, by the intense bi-chloride rub has continued and produced such decided results that we are forced to revise some of our long standing beliefs in regard to this disease. In cases of acute trachoma uncomplicated by syphilis or tuberculosis, and which have not been previously treated with blue-stone or other treatments, and which have not been operated upon, the intense bi-chloride rub, under cocaine, will completely cure without leaving any scar tissue. This leads us to the conclusion that the scar tissue of trachoma is due to the faulty treatment or control of the disease.

In the treatment of corneal opacities the negative galvinism has been further developed and is still used extensively at the special sight conservation clinic at P. S. 30, Manhattan.

The Blind and Sight Conservation work is continuing to grow in importance and results. We now have 699 active cases under supervision and treatment at the Sight Conservation Clinic. 1,114 cases with vision of 20/50 or worse have been sent

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to us as candidates, of which 639 have been terminated cured, and 475 while still under treatment, have improved to such an extent that they have been assigned to normal classes. Of those cases in the Sight Conservation Classes, 33 have been terminated cured, and 34 though still under treatment, have so improved that they have been re-assigned to the normal classes. There are at present 99 children in the Blind Classes.

There is a sufficient number of children in the public schools of New York City, with a vision so poor that they should be in sight conservation classes. There should be a sight conservation class for approximately every 10,000 pupils. The sight conservation method of teaching combined with constant oculist supervision is of the utmost value in the prevention of the progress of myopia, and a perfected method of dealing with children with myopia of a small degree, to prevent the progress of the condition, should be created along the lines of similar work now done in the public schools of London, England. It is recommended that the lighting of the public schools receive more serious attention than it has in the past, as poor lighting of schools is undoubtedly the cause of a great deal of myopia. It is universally recognized that myopia is increasing rapidly, that myopia is due to eye strain and that the effort made by the growing child to study in schools in poor light, and often in artificial light, which is always a strain, is a most active cause for this increase. We have classrooms in some of the schools which are lighted nearly every day with gas light of very poor quality. One large High School has a study room which is used all day by hundreds of pupils, and is lighted only by electricity placed in a high ceiling.

The guidance of the Blind and Sight Conservation Classes is being put more and more on the Supervising Oculist; this includes conferences with other organizations interested in this work, as the National Committee for the Prevention of Blindness, etc., and the feature is sure to increase as the work developes.

Following is the summary of the work done in the clinics last year:

Refraction Service—

Total No. Cases	12,544
Total No. Visits	30,567
Total No. Refractions	27,315
Total No. Rx. for Glasses	10,605

This is a slight increase over last year.

Contagious Service—

Total No. Cases	7,276
Total No. Treatments	56,368

showing an increase in new cases over last year, with a decrease in the number of treatments due, probably, to improved methods in treating follicular conjunctivitis.

Dental Clinics.

The dental clinic problem has been moving fast since its inception and establishment in January, 1914. In that year eight clinics were established with two dentists and a nurse in one clinic, and one dentist and a nurse in each of the others. Each succeeding year, as experience indicated, the scope and intent of the clinic work has been changed to meet new conditions.

Experience has taught that, everything else being equal, the proper place to do dental work for children is within the school building. There are many reasons for this, but briefly, the time saved to the child's schooling by not having to waste time going to or from, or waiting at a clinic, is one of the two chief reasons, the other being the fact that the child accepts the work in a more normal frame of mind, and the total educational effect, dentally speaking, is more evident and lasting. Along

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with this, the advent of the dental hygienist in this State, and the realization of her value as an essential assistant in a dental clinic, is now completely recognized.

Three of these hygienists were employed temporarily in the Fall of 1917, but owing to the war conditions, their services were not continued in 1918 or 1919, but our programme for the new year calls for a great addition to this branch.

The dental work, as done, is confined to the two younger years of school, with special attention given at all times to children who are held up on the issuance of their work paper certificates, and children in such special classes as the anaemic and sight conservation classes.

The work as done by the dentists consists of all necessary fillings of amalgam—the various cements, and necessary extractions as well as actual prophylactic work and instruction.

The nurse or registrar takes complete care of the clinic and of its clinical records, as well as assisting the dentist while operating. She also does prophylactic work and instruction.

The records that are kept are:

(a) Parent's consent card.
(b) Index reference cards.
(c) Case history cards.
(d) Daily record card of work done by dentist.
(e) Daily record card of work done by nurse or hygienist.
(f) Daily record of all work done in the clinic.
(g) Weekly report cards of all work done in the clinic.

Interruption in the work of the clinics has been reflected in our figures for the year. These interruptions were chiefly due to resignation and difficulty of replacement by suitable persons.

Although the size of the dental staff remains the same as in previous years, the amount of work performed shows a distinct increase. The figures for the year are as follows:

Dental Work During 1919.

No. of cases brought forward (cases not completed in previous year)		4,313
No. of visits to the clinic (initial visits)	6,689	
No. of re-visits to the clinic (visits necessary to complete work)	10,253	
Total visits to clinic		16,942
No. discharged		5,453
No. cured (cases on which complete work has been done)	5,358	
No. dropped (cases dropped for special reasons)	95	
No. cases pending (work not complete on these at the termination of the year)		1,238
No. of treatments (a treatment is counted for every separate distinct item in connection with dental work performed)		57,662
Total number of extractions		16,191
Deciduous teeth	12,870	
Permanent teeth	3,321	
Fillings (of every variety)		13,437
Temporary fillings	1,256	
Permanent fillings	12,181	
Cleanings		5,698
Other operations (indicates every item of work done for the child not specially listed)		4,940
Visits by nurses to homes (with reference to special cases)		272
Operations (sum total of dental operations performed in child's mouth)		33,977

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Special Nursing Features.

Changes have taken place in the nursing force of the Bureau during the past year, due in a measure to the return of many nurses from military service abroad, and to the great demand for public health nurses in other cities and communities offering attractive inducements to those who have had experience such as the Bureau offers. Numerous visitors come to this office from all over the country and even from foreign parts who are engaged in public health work of one sort or another, who come for the purpose of learning our methods of school and baby welfare nursing; numerous students taking public health courses in the city come to us for their practical experience.

It has been the desire of the Superintendent of Nurses to broaden, in so far as it is physically possible, the nurse's attitude towards her work and to make her better able to cope with the problems that confront her in the performance of her daily duties, by lectures and visits to special clinics.

The special assignments, such as malnutrition and other surveys, have taken much time; it is gratifying to notice the intimate relation the nurse bears to the children under her care in spite of the large number under supervision, ranging from 4,000 to 7,000 per nurse.

The children who have received the intensive instruction during the past year are those suffering from malnutrition or some other form of under-nourishment; donations have been made by philanthropic people who were impressed by the publicity given and by the large percentage of under-nourishment among school children. A fund of $300 has been disposed of in buying milk for children of the public schools; during the summer months large groups of children have been sent to the country, using for this purpose every available facility at our command.

In connection with the Milk and Dairy Farm Exposition at the 71st Regiment Armory during the month of April this Bureau equipped a booth representing a Baby Health Station, at which there was a daily attendance of doctors and nurses who instructed visitors, distributed literature, and explained the purpose of the Baby Health Stations all visitors who showed an interest. A baby contest was held and prizes distributed to the physically perfect babies attending the Baby Health Stations throughout the city.

Issuance of Employment Certificates.

Notwithstanding the increase in the number of children applying for employment certificates, this has been one of the few years in which legislation containing more stringent provisions for the issuance of such certificates has not been enacted. This does not mean that agencies interested in the welfare of children did not present or support new measures; on the other hand, many bills were introduced, but failed to pass during the sessions. Among the important measures concerning this phase of the Department's activities was a bill providing for the transfer of the issuance of employment certificates, together with the office personnel, to the Bureau of Attendance of the Department of Education. The bill failed to pass. From present indications, many new measures will be added to those of last year and introduced during the 1920 session of the legislature.

Public and private agencies interested in the question of vocational guidance and junior placement have endeavored to interest the applicants in their activities and the benefits to be derived by registering before entering industry. The Bureau of Child Hygiene, of the Department of Health, regrets that very little was accomplished in this direction, for the reason that it was impossible to get the children to consider the subject. They needed no assistance in locating position and, generally speaking, all preliminaries, including interview with prospective employer, date specified for entrance

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and salary question, had received attention before application for a certificate was made. Invariably the salary was greatly in excess of that received by Department employees of the same age in similar assignments.

The Division has been confronted from time to time with various problems, involving the Child Labor Law, which seemed to work an injustice with certain applicants; therefore, in the preparation of this report the officials in the different Boroughs were asked for an opinion.

First—Elimination of the 130 days' attendance required of all applicants between their thirteenth and fourteenth year, or the year preceding the date of application. Many children graduate, and through neglect of the school authorities to inform them that they must attend school or obtain an employment certificate, remain at home or work illegally, and when the attendance officer visits the case, the child has been absent and cannot supply the requisite number of days. This provision is excellent in checking truancy for the undergraduate, but for children who have completed the elementary course, it is unreasonable to insist upon their remaining in school marking time to make up the 130 days. In this connection it is recommended that the Department support any measure which provides for the elimination of this clause with reference to graduates or children absent from school through illness.

Second—The repeal of the Summer vacation permit. This certificate permits children over fourteen years of age who meet the school attendance requirement and qualify physically, to be employed in mercantile establishments from July 1st to August 31st. This temporary period of employment gives the child a taste of work, and many fail to return to school in the Fall until the attendance officer forces compliance with the law; many employers fail to dispense with the child's service; moreover, very little choice of position is given and much adverse criticism has been voiced regarding the restriction to mercantile establishments, as it is claimed that the modern factory is superior to the store basement. Many employers are reluctant to employ children and teach them the work for the temporary period of two months.

Third—Increase of age limit. At the Convocation on Education, held in Albany, this was a much mooted question. During the session the increase was opposed by several school authorities, while both manufacturer and labor urged its adoption. At the final session one of the resolutions adopted for consideration in the Children's Code bill was a sixteen years' age limit for employment of children in New York State. It is quite certain that any legislation in this direction must be accompanied by a diversified curriculum to handle the 27,000 children retained in school.

During the year 50,866 applications were received for permanent certificates. The physical examinations totaled 49,052; of these 26,036 were found normal or without physical defects; the remaining 23,016 comprise children with very slight defects, which merely required advice; others with minor defects requiring treatment and the withholding of certificates pending same, or cases in which defects were of such nature as to refuse certificates outright; 4,437 children with minor physical defects were temporarily withheld; the defects were as follows, some children having more than one defect:

Children with defective teeth	2,717
Children with defective vision	2,195
Children with acute eye diseases	29
Children with hypertrophied tonsils	266
Children with miscellaneous defects	509

In these cases, after the defect was treated or corrected, the certificate was granted. The courts handling violations of the compulsory education law have objected to this procedure. It may seem unnecessary to refuse a child for defective teeth or defective

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vision, but the benefit to the child's health, which correction or treatment will procure, is of paramount importance to the Department, irrespective of the temporary inconvenience due to the child's delay in entering industry. It is the aim of the Department to place the child in a condition as near normal as possible and thereby lessen or safeguard against future defects arising from the effects of industry. When it is considered that approximately seventy-five per cent. of the cases, so delayed, are corrected or treated and subsequently granted, that facilities are available for the treatment without cost to the parent, and that only the obstinate or negligent cases are brought into court, the benefit derived by the child in an improved physical condition seems to warrant the continuance of the procedure. In the above classification "miscellaneous" covers the temporarily withheld cases, which failed to obtain treatment and were refused certificates. Permanent employment certificates permitting children between fourteen and sixteen years of age to be employed in mercantile establishments or factories were issued to 49,294 applicants. Summer vacation certificates were issued to 4,736, and in 179 cases it was necessary to refuse certificates for the reasons stated in the attached statistical report of the work of the Division.

During the temporary assignment of the Chief of the Division of Employment Certificates to another branch of the City government, the New York Child Labor Committee volunteered the services of its Assistant Secretary to direct the work of the Division, and this assistance was gratefully received and appreciated during the trying period of the annual June rush, when the Division was functioning from about fourteen schools throughout the City.

The spirit of co-operation established in previous years with the Department of Education and State Industrial Commission has continued. The former has a representative assigned to the Manhattan and Brooklyn office for the purpose of referring undergraduates, as they receive their certificates, to the continuation classes in accordance with the compulsory school law. In addition, the Assistant Director of the Bureau of Child Hygiene has on several occasions examined children referred by the Department to determine whether or not their education, as taught by private tutors, or in private schools, is equivalent to that required by the law for an elementary school course or completion of the sixth year. The State Indusrial Committee has supervision over the issuance of certificates, and frequent conferences between Department employees have been held and all violations found by Health Department employees have been referred for investigation.

To improve the work of the Division of Employment Certificates the following recommendations are made:

1. Legislation to exempt graduates from 130 days' attendance provision required of applicants between the thirteenth and fourteenth year, or the year preceding application.
2. The repeal of the summer vacation permit law.
3. An increase in the age limit to sixteen years, except for graduates.

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SUMMARY OF VITAL STATISTICS FOR THE MONTH OF AUGUST, 1920.

During August 4,831 deaths were reported in the Greater City, equivalent to a rate of 9.58—an increase of .38 in the rate, as compared with August, 1919. There was a one hundred per cent. increase in the mortality of typhoid fever during the past month, as compared with the corresponding month of 1919, 25 deaths being reported from this cause, as compared with 12. As most cases of typhoid reported in the city have their origin outside of the city, this increase in the mortality from this preventable cause accentuates the importance of vaccination against this disease before vacation. The residents of the city have become so accustomed to enjoying a safe water and milk supply that when they go out into the country to spend their vacation they neglect to inquire into the source and quality of the water and milk supplied them, with the result that each year a goodly number of cases of "vacation typhoid" are reported in the city.

During the month 65 deaths were reported from whooping cough, as compared with 18 during August of last year. There was also a corresponding increase in the number of cases reported in the city during the month, 664, as compared with 152 during August, 1919. There was a slight decline in the mortality of measles and of diphtheria during the month, and a corresponding decrease in the number of cases reported. The mortality from pulmonary tuberculosis and other forms of tuberculous diseases was again lower during the past month than during the corresponding month of last year, and there was a corresponding decline in the number of cases reported which promises a continued reduction in the death rate of this scourge. The mortality of the other preventable diseases showed minor fluctuations: 6 fewer deaths being reported from cerebro spinal meningitis; 14 fewer deaths being reported from lobar pneumonia; and, 3 more deaths being reported from broncho pneumonia. Among children under five years of age, 502 deaths were reported from the diarrhœal diseases, as compared with 549 during August, 1919. A striking feature of the mortality of the month was an increase in the number of deaths caused by appendicitis—from 49 during August of last year, to 94 during the past month.

Of the chronic diseases, there was a slight increase in the mortality of organic heart disease and appoplexy, which, however, was offset by the decline in the death rate of chronic nephritis. The mortality of the puerperal diseases, including septicemia, was considerably heavier during the month just closed than during August of last year. This, however, was not due to an increase in the incidence of these diseases, but to the higher birth rate of this year. The outstanding features in the statistics of the month are the increase in the number of cases and deaths from typhoid fever; the increase in the incidence and mortality of whooping cough; and the decrease in the mortality and incidence of pulmonary tuberculosis.

During the month 11,150 births were reported, as compared with 10,014 during August, 1919—an increase of more than 1,100, which affected a corresponding increase in the birth rate, from 19.64 to 22.10. There was also a tremendous increase in the number of marriages reported during the month and consequently also in the rate, 4,094 marriages having been reported, as compared with 2,935 during August, 1919. Their respective rates were 8.12 and 5.76. This is a most hopeful sign since the marriage rate is always a reliable index of prosperity.

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POPULATION, MARRIAGES, BIRTHS AND DEATHS, AUGUST, 1920.

Boroughs.	Population U. S. Census April 15, 1910.	Estimated Population July 1, 1920.	Certificates Received and Tabulated.			Rate per 1,000 Based on Department Estimate.			Corrected Death Rate. **	Corr'td Death Rate Correspon'g Month 1919.
			Marriages	B'ths	* D'ths	Marriages.	B'ths.	D'ths.		
Manhattan	2,331,542	2,829,239	2,219	4,776	2,179	9.55	20.55	9.38	9.26	8.83
The Bronx.	430,980	669,233	323	1,195	529	5.87	21.74	9.62	9.26	9.74
Brooklyn..	1,634,351	2,117,908	1,278	4,143	1,577	7.35	23.82	9.07	9.50	9.07
Queens....	284,041	419,506	210	829	369	6.10	24.06	10.71	11.14	10.47
Richmond.	85,969	105,559	65	207	177	7.50	23.88	20.42	15.46	13.19
N. Y. City.	4,766,883	6,141,445	4,095	11,150	4,831	8.12	22.10	9.58	.....	9.20

*Includes 147 deaths of non-residents of the city, which, if deducted, would give a death rate for the city of 9.29 per 1,000.

**Corrected by redistributing deaths according to borough of residence.

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REGISTERED MORTALITY FROM PRINCIPAL CAUSES.

AUGUST, 1920.

	Manhattan.		The Bronx.		Brooklyn.		Queens.		Richmond.		City of New York.	
	Aug.		Aug.		Aug.		Aug.		Aug.		Aug.	
	1920	1919	1920	1919	1920	1919	1920	1919	1920	1919	1920	1919
Total, all causes	2152	2083	509	534	1652	1594	384	361	134	116	4831	4688
1. Typhoid Fever	10	6	3	1	8	3	4	2	...	...	25	12
3. Malarial Fever	....	....	...	...	....	1	...	1	1	...	1	2
4. Typhus Fever	....	....	...	...	....	....	...	...	...	...	....	....
5. Measles	2	7	...	...	4	2	...	...	...	...	6	9
6. Scarlet Fever	6	2	1	...	3	2	1	...	...	...	11	4
7. Whooping Cough	38	6	7	...	16	11	2	1	2	...	65	18
8. Diphtheria and Croup	19	16	1	11	11	8	3	3	1	..	35	38
9. Influenza	8	7	...	1	7	1	1	...	...	1	16	10
10. Cholera Nostras	....	....	...	...	....	....	..	..	...	...	....	....
11. Poliomyelitis	....	....	...	...	1	....	..	1	...	...	1	1
12. Other Epidemic Diseases	3	4	2	3	8	3	2	4	2	...	17	14
13. Tuberculosis Pulmonalis	215	224	41	92	127	161	45	42	10	10	438	529
14. Tuberculous Meningitis	15	29	7	2	11	14	2	1	2	2	37	48
15. Other forms of Tuberculosis	22	23	4	4	16	10	2	7	...	2	44	46
16. Cancer, Malignant Tumor	181	175	54	54	144	139	42	33	6	7	427	408
17. Simple Meningitis	10	12	6	3	4	10	1	2	2	1	23	28
Of which												
17a. Cerebro Spinal Meningitis	5	7	2	1	1	6	...	2	2	...	10	16
18. Apoplexy and Softening of the Brain	20	28	10	4	16	12	3	7	5	2	54	53
19. Organic Heart Diseases	293	289	66	76	323	252	58	43	21	9	761	669
20. Acute Bronchitis	8	4	...	1	9	9	...	...	...	...	17	14
21. Chronic Bronchitis	....	3	1	1	1	....	...	2	...	...	2	6
22. Pneumonia (exc. Broncho Pneumonia)	50	64	15	10	42	47	6	5	2	3	115	129
22a. Broncho Pneumonia	79	75	17	19	40	35	10	12	1	3	147	144
23. Other Respiratory Diseases	8	11	3	5	8	3	...	2	1	3	20	24
24. Diseases of the Stomach (Cancer excepted)	13	10	5	4	5	3	11	...	1	...	35	17
25. Diarrhoeal Diseases (under 5 years)	315	273	43	35	189	191	19	30	16	20	582	549
26. Appendicitis Typhlitis	36	13	13	11	31	19	11	6	3	...	94	49
27. Hernia, Intest'l Obstruction	24	15	5	7	16	18	4	2	2	...	51	42
28. Cirrhosis of Liver	12	15	2	2	9	13	2	2	...	1	25	33
29. Bright's Disease and Nephritis	99	115	25	26	108	152	25	30	6	8	263	331
30. Diseases of Women (not Cancer)	11	6	2	3	4	6	2	3	...	...	19	18
31. Puerperal Septicaemia	7	2	3	2	2	3	1	1	...	...	13	8
32. Other Puerperal Diseases	18	10	4	5	17	16	6	4	...	3	45	38
33. Congenital Debility and Malformations	118	136	35	39	99	106	23	23	7	7	282	311
34. Old Age	3	6	2	1	10	1	4	1	...	1	19	10
35. Violent Deaths	136	175	33	25	105	92	35	30	19	11	328	333
a. Sunstroke	3	3	...	...	1	....	...	...	...	...	4	3
b. Other Accidents	123	153	33	22	100	83	34	29	18	11	308	298
c. Homicide	10	19	...	3	4	9	1	1	1	...	16	32
36. Suicide	25	28	12	4	20	21	2	9	2	1	61	63
37. All other causes	336	291	87	80	238	227	57	51	22	21	740	670
38. Ill-defined causes	12	3	...	3	...	3	...	1	...	...	12	10

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REGISTERED MORTALITY FROM ALL CAUSES AND CERTAIN INFECTIOUS DISEASES, BY WARDS, AUGUST, 1920.

BOROUGH OF MANHATTAN.

Wards.	Area in Acres.	Population U. S. Census 1910.	Number of Persons to the Acre.	Typhoid Fever.	Smallpox.	Measles.	Scarlet Fever.	Diphtheria and Croup.	Pulmonary Tuberculosis.	Lobar Pneumonia.	Broncho-Pneumonia.	Diarrhoeal Diseases.	All Causes.	Deaths of Children Under 5 Years.
1	154.0	9,750	63.0	..	..	..	..	1	2	2	..	5	29	9
2	81.0	933	11.5	..	..	..	..	..	1	..	..	..	3	..
3	95.0	1,915	20.2	..	..	..	..	..	1	..	..	1	5	1
4	83.0	21,336	257.1	..	..	..	..	..	6	1	1	6	29	11
5	168.0	5,666	33.7	..	..	..	..	..	..	..	1	1	4	1
6	86.0	19,670	228.7	..	..	..	..	..	8	..	1	4	23	7
7	198.0	102,101	515.6	1	..	..	..	..	3	4	5	13	77	35
8	183.0	33,182	181.4	..	..	..	1	..	6	1	1	4	33	11
9	322.0	64,909	201.6	1	..	..	..	..	5	1	2	12	70	21
10	110.0	66,439	604.0	..	..	..	..	..	4	..	3	4	26	10
11	196.0	136,548	696.7	..	..	..	..	..	5	2	3	8	56	23
12	6,154.0	806,648	131.1	3	..	2	1	6	63	21	29	117	793	247
13	107.0	64,651	604.3	..	..	..	..	..	1	1	1	4	38	14
14	96.0	38,321	399.3	1	..	..	..	..	1	2	1	5	32	14
15	198.0	30,584	154.5	1	..	..	..	..	1	..	1	2	15	3
16	349.0	55,926	160.2	..	..	..	1	..	12	2	2	9	73	18
17	331.0	172,334	520.6	..	..	..	1	2	17	3	8	25	135	56
18	450.0	62,821	139.6	1	..	..	..	2	6	..	2	16	87	21
19	1,481.0	292,950	197.7	1	..	..	2	5	23	3	6	34	217	70
20	444.0	73,308	165.1	..	..	..	..	1	8	..	1	9	62	19
21	411.0	62,345	151.7	1	..	..	..	1	11	2	5	7	92	28
22	1,529.0	209,154	136.8	..	..	..	..	1	31	5	6	42	253	77
Total....	13,226.0	2,331,491	176.3	10	..	2	6	19	215	50	79	328	2152	696

BOROUGH OF BROOKLYN.

1	233.0	21,851	93.8	..	..	..	..	1	4	1	2	2	28	8
2	97.7	6,894	70.6	..	..	..	..	..	1	..	1	1	10	5
3	161.4	15,910	98.6	..	..	..	..	..	..	1	..	3	15	4
4	111.3	10,477	94.1	..	..	..	..	..	3	..	..	1	14	3
5	119.4	19,401	162.5	..	..	..	..	..	2	2	..	4	21	6
6	302.9	46,437	153.3	1	..	..	..	..	6	1	..	8	45	14
7	458.5	44,037	96.0	..	..	..	..	..	4	2	1	3	48	11
8	1,843.2	82,687	44.9	..	..	1	..	1	12	5	2	12	124	28
9	623.6	50,501	81.0	..	..	..	..	..	3	..	1	9	62	21
10	318.7	41,238	129.4	..	..	1	..	1	8	..	..	7	44	12
11	252.6	21,659	85.7	..	..	..	..	..	1	..	2	2	23	10
12	663.1	29,262	44.1	..	..	..	..	1	5	..	1	9	44	17
13	230.3	30,091	130.7	..	..	..	..	..	2	..	1	7	32	8
14	282.6	33,329	117.9	..	..	..	..	..	4	..	1	10	38	16
15	244.8	35,887	146.6	..	..	..	1	..	2	..	1	4	25	10
16	244.8	68,244	278.7	..	..	..	..	..	2	1	2	9	45	21
17	823.3	70,346	85.5	1	..	..	1	2	2	2	2	22	82	38
18	873.0	35,708	40.9	1	..	..	..	..	2	1	..	9	41	13
19	413.8	44,860	108.4	1	..	..	..	..	2	..	2	1	31	7
20	461.4	27,463	59.5	..	..	..	..	..	2	..	2	6	30	12
21	483.2	78,741	163.0	..	..	..	..	..	3	..	2	8	69	14
22	1,361.6	81,283	59.7	..	..	..	..	2	8	..	2	6	82	15
23	736.0	65,561	89.1	1	..	..	..	..	7	..	1	..	65	7
24	1,198.5	80,466	67.2	..	..	..	..	..	6	3	2	3	58	9
25	567.8	63,597	112.0	1	..	..	..	1	5	..	1	5	52	9
26	3,590.2	177,963	49.5	1	..	..	..	1	8	7	5	15	157	44
27	400.7	76,000	189.6	..	..	..	..	..	4	3	1	7	39	13
28	884.4	77,451	87.6	..	..	..	..	1	7	2	1	4	85	9
29	[3,800.0	72,351	19.0	1	..	1	..	..	6	3	1	7	81	18
30	5,401.1	76,406	14.1	..	..	1	1	..	3	4	2	4	82	19
31	6,312.3	30,988	4.9	..	..	..	..	..	1	1	..	3	34	10
32	5,479.5	17,419	3.2	..	..	..	..	..	2	3	1	3	46	11
Total....	38,977.8	1,634,508	41.9	8	..	4	3	11	127	42	40	194	1652	442

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BOROUGH OF THE BRONX.

Wards.	Area in Acres.	Population, U. S. Census 1910.	Number of Persons to the Acre.	Typhoid Fever.	Smallpox.	Measles.	Scarlet Fever.	Diphtheria and Croup.	Pulmonary Tuberculosis.	Lobar Pneumonia.	Broncho-Pneumonia.	Diarrhoeal Diseases.	All Causes.	Deaths of Children Under 5 Years.
23	4,267.0	268,880	63.0	1	..	..	..	1	24	8	9	33	272	82
24	22,255.8	162,062	7.3	2	..	..	1	..	17	7	8	12	237	51
Total.	26,522.8	430,942	16.2	3	..	..	1	1	41	15	17	45	509	133

BOROUGH OF QUEENS.

1	4,650.0	61,763	13.3	..	..	..	..	..	5	2	4	4	77	19
2	14,700.0	105,219	7.2	1	..	..	..	1	11	1	2	4	89	18
3	22,000.0	37,171	1.7	1	..	..	..	..	12	2	2	3	62	14
4	36,600.0	67,412	1.8	1	..	..	1	2	16	..	2	10	111	20
5	3,770.0	12,476	3.3	1	..	..	..	..	1	1	..	2	45	5
Total.	81,720.0	284,041	3.5	4	..	..	1	3	45	6	10	23	384	76

BOROUGH OF RICHMOND.

1	3,340.0	27,201	8.1	..	..	..	..	..	6	..	..	3	52	9
2	4,130.0	16,871	4.1	..	..	..	..	1	1	..	..	5	27	9
3	10,050.0	19,812	2.0	..	..	..	..	..	2	..	1	4	29	8
4	8,180.0	10,662	1.3	..	..	..	..	..	..	2	..	4	16	6
5	10,900.0	11,423	1.0	..	..	..	..	..	1	..	..	1	10	3
Total.	36,600.0	85,969	2.3	..	..	..	..	1	10	2	1	17	134	35

DEATHS ACCORDING TO AGE GROUPS, AUGUST, 1920

Boroughs.	All Ages.	Under 1 Year.	1 Year and under 2.	Under 5 Years.	5-15 Years.	15-25 Years.	25-45 Years.	45-65 Years.	65 Years and over.	Colored.	Chinese.
Manhattan.	2,152	510	93	696	66	124	369	548	349	160	5
The Bronx..	509	93	23	133	27	35	97	135	82	8	..
Brooklyn...	1,652	338	47	442	67	97	266	420	360	39	..
Queens.....	384	60	5	76	17	28	79	107	77	6	..
Richmond..	134	24	8	35	5	12	21	28	33	3	..
City of N.Y	4,831	1,025	176	1,382	182	296	832	1,238	901	216	5

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INFECTIOUS DISEASES.

Number of Cases Reported in the City of New York, by Boroughs, During August, 1920, and August, 1919.

	Manhattan.		The Bronx.		Brooklyn.		Queens.		Richmond.		City.	
	August		August		August		August		August		August	
	1920	1919	1920	1919	1920	1919	1920	1919	1920	1919	1920	1919
Typhoid Fever	94	52	23	12	62	30	15	17	14	4	208	115
Typhus Fever	2	1	....	....	....	....	...	...	...	...	2	1
Malaria	2	3	....	1	....	....	1	...	...	...	3	4
Small Pox	6	....	....	....	....	....	...	...	...	...	6	....
Measles	91	130	7	9	34	22	6	9	12	5	150	175
Scarlet Fever	67	30	19	9	49	35	7	6	4	1	146	81
Whooping Cough	435	66	57	15	134	63	32	6	6	2	664	152
Diphtheria and Croup	230	263	73	91	149	182	50	53	20	14	522	603
Leprosy	1	2	....	....	....	....	...	...	...	...	1	2
Mumps	25	42	8	12	9	8	1	2	1	1	44	65
German Measles	15	12	1	1	....	1	...	1	...	...	16	15
Chicken Pox	35	46	18	4	21	13	3	2	3	2	80	67
Glanders	....	....	....	....	....	....	...	...	...	...	....	....
Anthrax	4	....	....	....	....	....	...	...	...	...	4	....
Rabies	....	....	....	....	....	....	...	...	...	...	....	....
Tetanus	....	1	....	....	1	....	...	1	...	1	1	3
Pellagra	....	....	....	....	....	....	...	...	...	...	....	....
Pulmonary Tuberculosis	535	684	83	119	299	301	48	8	21	11	986	1,123
Other Tuberculous Diseases	....	....	....	....	....	....	...	...	...	...	....	....
Syphilis	905	762	115	107	355	311	40	42	23	14	1,438	1,236
Gonorrhoea	162	212	40	45	109	137	14	9	7	13	332	416
Cerebro-Spinal Meningitis	12	9	4	2	8	12	...	1	...	1	24	25
Poliomyelitis	....	1	1	....	5	2	2	2	...	...	8	5
Hookworm	....	....	....	....	....	....	...	...	...	...	....	....
Trichinosis	....	....	....	....	....	....	...	...	...	...	....	....
Influenza	23	....	1	....	14	....	...	...	...	...	38	....
Pneumonias	146	....	26	1	76	....	2	1	7	2	257	4
Total	2,790	2,316	476	428	1,325	1,117	221	160	118	71	4,930	4,092

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MONTHLY METEOROLOGICAL SUMMARY.

AUGUST, 1920

Date.	Temperature. (Degrees Fahrenheit.)				Relative Humidity. (Per Cent.)	Precipitation (Inches.)		Wind. (Miles per hour.)			Sunshine.
	Maximum.	Minimum.	Mean.	Departure of Mean from Normal.	8 a.m.	Rain.	Snow.	Average Velocity.	Prevailing Direction.	Maximum Velocity and Direction.	Number of Hours.
S 1	77	65	71	— 3	85	.05	0	9.0	S-SW	26 NW	4.0
M 2	76	62	69	— 5	63	.23	0	12.0	N	25 N	8.0
T 3	76	57	66	— 8	74	0	0	10.7	N	24 N	13.1
W 4	81	64	72	— 2	74	0	0	8.2	NE	16 E	11.3
T 5	78	64	71	— 3	64	T	0	10.2	S	21 S	12.0
F 6	72	65	68	— 5	95	.55	0	6.5	E	12 E	0.2
S 7	84	66	75	+ 2	94	.77	0	10.0	S	22 W	6.0
S 8	85	67	76	+ 3	83	T	0	13.6	SW	29 SW	11.4
M 9	85	71	78	+ 5	89	0	0	18.6	SW	32 S	10.7
T 10	80	70	75	+ 2	91	.66	0	18.9	S	31 S	3.5
W 11	82	70	76	+ 3	93	.65	0	10.1	S	21 8	7.3
T 12	85	68	76	+ 3	84	0	0	9.2	S	22 S	12.7
F 13	83	72	78	+ 5	95	.21	0	11.7	S	26 SE	7.2
S 14	83	72	78	+ 6	94	.10	0	15.4	S	34 W	5.2
S 15	81	73	77	+ 5	94	.11	0	11.8	SW	24 SW	4.1
M 16	85	72	78	+ 6	95	1.15	0	9.8	SW	40 S	4.7
T 17	85	72	78	+ 6	83	.28	0	6.3	NW	20 NW	8.9
W 18	80	67	74	+ 2	93	.04	0	8.6	E	19 E	4.0
T 19	74	63	68	— 4	90	0	0	14.2	E	25 E	8.1
F 20	72	60	66	— 6	71	0	0	14.4	E	19 E	9.4
S 21	75	63	69	— 3	92	.02	0	15.2	E	25 E	3.9
S 22	82	64	73	+ 1	100	0	0	8.3	S	32 N	9.1
M 23	74	61	68	— 4	68	T	0	17.2	N	35 N	7.9
T 24	74	64	69	— 2	70	0	0	6.2	SW	13 NE	4.1
W 25	77	65	71	0	69	T	0	7.3	NE	14 NW	7.2
T 26	79	66	72	+ 1	71	0	0	9.2	E	16 E	12.1
F 27	77	65	71	0	74	0	0	7.6	S	19 S	10.5
S 28	74	64	69	— 2	80	T	0	5.7	SE	14 SE	7.2
S 29	78	67	72	+ 2	81	†	0	8.8	E	19 S	10.5
M 30	83	68	76	+ 6	90	T	0	13.1	SW	32 W	9.9
T 31	83	69	76	+ 6	75	.09	0	23.2	W	56 NW	9.3
Month	Mean 79.4	Mean 66.3	Mean 72.8	Blank	M'n 83	Total 4.91	Total 0.0	Mean 11.3	Prev'l'g S	Blank ...,...	Total 243.5
Normal	79.9	65.7	72.2	Blank	77	4.53	0.0	9.0	S	Blank	Possible 426.9

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CONTENTS: OPEN AIR CLASSES.
SUPERVISION OF MIDWIVES AND OF BOARDED-OUT CHILDREN

MONTHLY BULLETIN
OF THE
DEPARTMENT of HEALTH
CITY OF NEW YORK

Public health is purchasable. Within natural limitations a community can determine its own death rate.

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ROYAL S. COPELAND, M. D., Commissioner of Health.

VOL. X. OCTOBER, 1920. No. 10.

OPEN-AIR CLASSES IN THE PUBLIC SCHOOLS OF NEW YORK CITY DURING 1919

By S. JOSEPHINE BAKER, M. D., *Director,*
and
JACOB SOBEL, M. D., *Assistant Director,*

Bureau of Child Hygiene.

In 1904, the Sea Breeze Hospital, located at Coney Island, and caring for children suffering from bone and gland tuberculosis, organized an open-air school for these patients.

In 1908, Bellevue Hospital organized an open-air school on an old discarded ferry-boat, which was properly altered for this purpose. It was called a day camp, as the children remained there from 8:30 a. m. to 5 p. m. on school days.

Others have been opened since, both on ferry-boats and roofs of hospitals and clinics. They are designated as day camps, and very successful results have been demonstrated.

In 1910, an "anaemic class" was organized in P. S. 21, Manhattan, for children who were physically sub-normal. The New York Tuberculosis Committee proposed this experiment, and they supplied the equipment and food.

In 1914, the Board of Education took over these classes in the schools and the number has been increased each year. The scope of usefulness has also been widened, as it has been demonstrated that with few exceptions every child will be benefited under such an environment.

Children discharged from day camps or sanatoria as arrested cases were formerly transferred to regular school classes. This exposed them to a relapse, and frequently

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their work was also too tedious and the concentration required was more than they could tolerate.

These children are now admitted to an open-air class whenever it is possible for them to attend a school having such a class. Soon after, children exposed to tuberculosis in their homes were also admitted to the open-air classes.

In 1913 open-window classes were organized. These are classes where the teachers are permitted to keep their windows open throughout the entire year. There is no special selection of pupils, but an entire regular class is placed in one of these rooms. There is no supervision of this work. The teacher has full control in the management of her class. No data are available as to the results of open-window classes.

Scope of Medical Supervision.

In March, 1917, the Board of Education requested the Health Department to take full medical charge of the open-air classes, as the Board found that the medical duties in these classes had increased to such an extent that they were unable to provide it. The Bureau of Child Hygiene assumed medical supervision of these classes and was authorized to carry out the following duties:

1. To recommend organization of new classes.
2. To recommend location of classrooms.
3. To recommend proper equipment.
4. To recommend standards and exercise supervision as to ventilation, heating and temperature classrooms are to maintain.
5. To recommend the pupils to be admitted.
6. To make periodical physical examinations of all pupils and notify parents as to conditions found.
7. To make home visits for the purpose of conferring with, and advising parents as to the need of correcting conditions found.
8. To supply teachers with full information as to conditions found and arrange for co-operation between teacher, medical inspector and nurse.
9. To make routine medical inspection at definite intervals, for the purpose of observing the physical status of the children and room conditions.
10. To supervise and direct weighing pupils monthly and measuring them each term.
11. To make recommendations as to the discharge of pupils.
12. To prescribe physical training exercises for individual pupils.

Designation of Classes.

These classes were formerly officially designated as "Anaemic Classes." As this name gives an erroneous conception of the types of pupils admitted, the Bureau of Child Hygiene recommended that they be called "Open-Air Classes."

By thus designating them the three types of classes with special ventilating methods are appropriately grouped, namely: (1) Outdoor Classes, (2) Open-Air Classes and (3) Open-Window Classes.

Furthermore, by changing the name to "open-air" classes, the stigma which attached itself to all pupils in "anaemic" classes is avoided, and these pupils are looked upon as the same as those in regular classes. The parents do not object to give their consent to their children being admitted to an open-air class, though they frequently refused to have them admitted to an "anaemic" class.

This report will only refer to one type of special ventilated classes; namely, open-air classes.

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Purpose of Classes.

The purpose of these classes is to make it possible for types of pupils whose physical condition prevents them from attending school in regular classes to regain their normal physical condition and at the same time to procure their education without any loss of time.

Conduct of Work.

The Bureau of Child Hygiene has established an organization to conduct this work systematically and efficiently. The organization consists of:

1. The Director of Bureau.
2. The Assistant Director.
3. Supervising Medical Inspector of the Open-Air Classes.
4. District Supervising Medical Inspector of Schools.
5. District Supervising Nurse of Schools.
6. Medical Inspector of Schools.
7. Nurse of Schools.

Heads and Duties of Divisions.

The respective duties of the various divisions of this organization are:

1. Director:

   In full charge of the work, directing and making final decisions as to how the work is to be carried on.

2. Assistant Director.

   The executive head of all work conducted in schools by the Bureau, to whom the entire supervising force reports full details of all work performed. He offers suggestions and ideas for improvement of the service. He submits to the Director for approval his recommendations and suggestions, as well as those of the supervising staff.

3. Supervising Medical Inspector of Open-Air Classes:

   The executive field head in charge of all the classes. He instructs the district supervising force, medical inspectors, nurses and teachers, how the work is to be conducted and how instructions are to be carried out. He reports directly to Chief of Division.

4. District Supervising Medical Inspector of Schools:

   In charge of a definite district. He is responsible for the character of work performed by the medical inspectors of his district and is the general adviser to the district supervising nurse assigned to his district. He reports directly to the Chief of Division, who refers indicated communications to the Supervisor of open-air classes for his approval and investigation.

5. District Supervising Nurse:

   In charge of a definite district. She is responsible for the character of work performed by the school nurses of her district. She reports directly to the Chief of Division and the District Medical Supervisor of her district. Her communications are referred by the Chief of Division to the Supervisor of open-air classes for his approval and investigation.

6. Medical Inspector of Schools:

   Assigned to definite schools. He is responsible for the admission and discharge of pupils of open-air classes. He examines the pupils at regular intervals, so as to advise what shall be done to improve their physical condition, as well as to advise the nurse as to action required of her. He makes home visits on absentees and on cases referred to him by the nurse. He reports directly to the District Supervising Medical Inspector.

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7. Nurse of Schools:

Assigned to definite schools. She is responsible for the weekly inspection of pupils. She carries out instructions of Medical Inspector, co-operates with the teacher, visits homes, conducts school consultations, and performs social service work. She reports directly to her District Supervising Nurse.

Types of Children Admitted.

At present the following types of children are admitted to the Open-Air Classes:

1. Children exposed to tuberculosis at home or in whose family there has been a recent death from this disease.
2. Children who have had tuberculosis which is now arrested or cured.
3. Children suffering from malnutrition.
4. Children who become tired easily or show languor or fatigue before the end of the day and on this account are unable to carry on their class work.
5. Children suffering from nervous diseases except chorea.
6. Children who frequently are absent because of colds, bronchitis, etc.
7. Children suffering from cardiac disease who are recommended by the private physician as being proper cases for these classes.

Increase of Classes.

The number of classes when this work was officially begun by the Department of Health, on February 1, 1917, was 84 classes. The number has since been increased to 107 classes on January 1, 1920. The increase is only limited on account of the lack of available classrooms for this purpose and the lack of funds to provide the necessary equipment.

Classrooms.

Classes are located in public parks, roofs of schools and private buildings and in classrooms located in the public schools.

The ideal rooms for our city are regular classrooms with an easterly and southerly exposure, on a floor high enough to provide a maximum amount of light and air. These rooms require only that the windows be altered so that they can be entirely opened. However, such conditions are not available in all the buildings, especially the old types, but it has been fully demonstrated that splendid results can be procured in any classroom, providing it is large enough for the purpose and has an ample amount of light and air.

Classrooms located in public parks or on roofs are too costly to fit up with the proper amount of structural changes demanded and besides are very expensive to maintain. While satisfactory conditions can be provided in the parks, the roofs in our city are very objectionable because of the smoke, dirt and difficulty of providing proper shelter from high winds, rain and snow.

The extra cost to provide the structural changes in a classroom located in a school is comparatively little, and besides it costs no more than a regular room to maintain it.

Register and Attendance.

There has been no difficulty in maintaining a full register in all the classes this year. The attendance was also excellent, averaging much higher than the regular classes. Fortunately, there was no epidemic this year that affected the attendance of these classes. The Board of Education has established 25 as a maximum register in an open-air class.

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Equipment.

The equipment remains the same as last year. Each child has a sleeping bag, cot and movable chair. On account of the lack of funds, however, no new equipment was procured during the year, and it was also impossible to have any damaged equipment repaired.

The equipment used is the minimum that can be of any service. With this limited equipment it becomes necessary for the children to provide themselves with a great deal of extra clothing, sweaters, gloves and overshoes. The need of a better equipment has been frequently discussed, but nothing can be done until the funds available will make it possible to improve it.

It also appears essential that the teachers be provided with a proper equipment, so that they will not find the low temperature unbearable.

The work has been conducted along the same lines as last year, as it has been found unnecessary to change the instructions to medical inspectors, nurses and teachers.

Methods of Examination.

The medical inspectors examine every child at the beginning and end of each term and as often during the term as any individual child requires it. At each visit to a school having open-air classes the nurse and teacher advise the medical inspector of the condition of the children and particularly those who require his personal attention.

The nurses visit the classes at least once a week and keep the medical inspector informed as to the condition of the children. As the nurses visit these schools daily, the teacher is always able to reach the nurse in the event of any of the children requiring special attention.

All data for each child is noted on the 296-K form, an individual card being kept for each child.

Follow-up.

The follow-up is conducted in three ways: school consultations, home visits and mothers' meetings. A regulation of the Associate City Superintendent of Schools in charge of the open-air classes demands that the first home visit each term be made by the class teacher.

The nurses hold school consultations and make home visits as often as the individual cases require it.

In the event of any case requiring special attention the nurse refers it to the medical inspector who holds a school consultation or makes a home visit according to the needs of the individual cases referred to him.

Mothers' meetings are held monthly by the teachers and the medical inspectors and nurses co-operate with the teachers at these meetings.

Difficulties Encountered.

This year has been a very difficult one because of two conditions for which there was no remedy. 1st—Lack of teachers. 2d—Lack of equipment.

1st. Though no teachers in the open-air classes resigned, there were, however, a number of changes due to promotions. Many of these teachers hold licenses for higher positions in the elementary and high schools. As the increase in salary for the open-air class teachers was very little, many of them availed themselves of the opportunity to procure a promotion. On this account a number of classes have new teachers, and in some few instances there are classes still without any teacher. The outlook, according to the opinion of the Associate City Superintendent in charge of open-air classes, is not very bright, as he states that there will be a number who will

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still receive promotions, and he has no one available to fill their places, at least not this year.

2d. No new equipment was obtained during the year, and no equipment damaged was repaired because of the lack of funds.

Some classes organized for more than two years are still without their equipment. In regard to equipment the outlook is better, as there is quite a fund available; in fact, the Associate City Superintendent in charge of these classes believes he can now supply or repair without leaving any equipment lacking.

Teachers.

The teachers assigned to open-air classes are exceptionally competent and interested in their work. They are now selected with great care, and the supervisor of open-air classes is always consulted before an appointment is given. The principals all now appreciate that no teacher is too good for this work, and in selecting one for their class they are influenced by the qualifications which have been established as essential for any one desiring to teach in one of these classes. These qualifications are: good health; even temperament; capacity for doing a large amount of school work well, as a number of grades must be taught; physical ability to make home visits; tact in handling both children and parents; willingness to do social service and a desire to study the problems of this work in the class by reading and taking appropriate courses of study.

The principals and teachers have afforded us full co-operation and are always willing and anxious to do anything that will be of benefit to their individual pupils, both in school and in their homes.

Daily Routine.

The classes all observe the following daily routine:

9-10 a. m.	School work
10-10:15 a. m.	Extra feeding
10:15-11 a. m.	School work
11-12 noon	Rest period
12-1 p. m.	Lunch period
1-2:45 p. m.	School work
2:45-3 p. m.	Extra feeding

We have positively established the fact that the best results are obtained with an a. m. rest period; that is, from 11 to 12 noon, directly before the lunch period. The teachers are now unanimously in favor of this routine, as they all agree that a maximum amount of school work is done with a minimum amount of fatigue. At the final dismissal at 3 p. m. none of the pupils show fatigue. Their p. m. school work is as satisfactory as their a. m. is. Classes located on roofs or upper floors observe a rest period from 1 to 1:10 p. m., which is deducted from their a. m. one, so that the children can get a short rest after climbing so many stairs.

Scope of the Work.

While the original aim of this work was to care for some of the sub-normal physical children, it has been now extended to all types of children physically sub-normal, including cardiac disease cases. The cardiac disease cases must, however, be recommended by their private or hospital physician, as a satisfactory case for such a class.

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The number of applications now being received from physicians, requesting that their patient be admitted to such a class, is steadily increasing, and, in fact, many must now be refused on account of the lack of classes.

The work is in this respect sadly handicapped, as the classes can accommodate but a small percentage of those desiring and needing the advantages offered in these classes.

The number of school children exposed to tuberculosis in their homes is over ten thousand (10,000), while the total capacity of all the classes is less than three thousand (3,000). If the total number of other types of children that should have the benefits afforded in these classes were added to the exposed cases, it would be found that fully ninety thousand (90,000) children require such an environment. The present outlook, however, does not give one hope of increasing the capacity of these classes materially for several years.

The Board of Education, however, has promised and has already made provision that at least one open-air class be built in every new school of average size.

The great need for more classes is also felt in the fact that it becomes necessary frequently to discharge a child who has improved so much that it is deemed only fair that another whose condition is bad be given the same opportunity. Many who regain their physical condition would, however, be better off, were they able to remain indefinitely in an open-air class, as many, though they do not go back physically, find it very difficult to do their school work in a regular class, as they miss the advantages of the open-air class, such as light, air, rest, extra feeding, etc., all of which are conducive to real mental activity.

Another phase which has been studied in a very limited manner is the effect of this environment upon the average normal child.

At P. S. 158, Manhattan, there is a class of normal average boys who are in an open-air class and follow the full routine, except omitting the rest period. This has been now conducted for five years, a new class each term, making ten (10) classes to date. The classes have all been of the seventh and eighth years. The register has always been over forty pupils. The results have been exceedingly good, as the class each term has been the banner class of the district when the District Superintendent's tests were held. The attendance has also been the best of the district. The teacher in charge finds the boys do much better work, more of it, can concentrate better and require less home work than those in regular classrooms. The teacher states that he himself is never fatigued, is always able to do more work himself and finds he can maintain his interest throughout the entire day.

This appears to be the next step in this work. If results can be procured for the sub-normal physical child, would it not be of greater value to prevent the children from becoming sub-normal by giving them the opportunities while normal that is now only afforded in most instances to a limited few physical sub-normal pupils.

The rest period is not required by the average normal child, but the extra feeding is, when they are in a low temperature for a considerable part of the day.

All the school work, except shop work and drawing, can be done in the open-air classes.

We all know that the children in the kindergarten and first-year classes are better physically than they will be after going to school for several years. Were they, however, to have the advantages offered in the open-air classes throughout their school life, could it not be expected that at least the greater majority would leave school at least physically normal? Besides, under such conditions, it would not be expecting too much to have the infectious diseases, especially tuberculosis, greatly reduced, for they all would surely be better physically when starting their commercial life.

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Following the proper way to live so many years, as they would have to do during their school life, would in most instances become a habit that most of them would follow for the rest of their life.

The open-air classes as now conducted remain a study with big limitations; were it extended to all children, no special classes would be required, and each classroom could accommodate a full register instead of a limited few. This must be the ultimate result that will be followed sooner or later, as the most progressive step in preventive medicine.

New Problems to Be Solved.

So long as we have our present limitations, many problems remain unsolved. So much has to do with the home condition of these children. The nurses and teachers have done a great deal of social service work which must be part of their duties. Conditions as at present exist make it very difficult to overcome home shortcomings. One of the biggest problems is to provide proper medical attention. At times it is difficult to get the parents to consent to having their children receive proper medical or surgical care for the defects found by the medical inspectors. In most instances, however, the nurses and teachers have gained the confidence of the parents who willingly agree to have their children properly attended to. However, the facilities are not at hand, and many a child is discharged from the class without having been able to procure treatment. This applies especially to dental care. With few exceptions these classes are located in the poorer neighborhoods, and the parents cannot afford to pay for treatment.

None of the available institutions are willing or appear to be able to care for all the cases within a reasonable time.

Another problem is the lack of special training of the new teachers. There is no proper course that they can take to fit them for this special work. No teacher ought to be given a class until she has been correctly trained. A new teacher is of little use to her class for the first two or three months she takes up the work, as in most cases they have only taught one grade at a time. It requires practice and skill to teach six or eight grades during one term.

Though mothers' meetings are held regularly, they are not systematically conducted, and one of the great essentials of this work is to have the mothers understand what they can do in regard to carrying out the proper home conditions that will benefit their children. They must understand what results can be procured before you can interest them to change their home conditions.

One of the greatest problems is to overcome the great loss these children have during the summer vacation especially, though it is always apparent after shorter ones. While we have been able to send a limited number away each summer, the time they are away is so short that little is gained or if gained lost again on their return to the city. Many of these children need a prolonged stay in the country during the summer, but no places are available for such purposes.

A school farm would solve this to some extent, were it possible to procure it, as the children could do enough of the work to make it nearly self-supporting. Over 50 per cent. of the gain made during the school session is lost during the summer vacations.

The proper equipment is easily solved, as it only depends on the funds being available for this purpose.

New Methods.

In our present method of work the inspectors and nurses have their regular school work to conduct, and the open-air class work is extra. Many have no such classes.

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Were it possible, a separate corps should be assigned to this work. They could be properly trained, and the work would be regularly, systematically and uniformly done. Frequently the work of the inspectors of the open-air classes is now interrupted or interfered with on account of some special work that must be done or some emergencies that arise. This work can never be done as well as it should be without a special corps.

The mothers' meetings, home visits, school consultations and home conditions require some personal qualifications which are not found in many of our corps. Perhaps they do the best they can, but this is not adequate.

Feeding.

Milk has been supplied to nearly every class this year. The cereal and milk has been discontinued, because so much milk was procurable. The usual quantity given was eight ounces twice a day, a. m. and p. m.

In the Boroughs of Manhattan, Bronx and Richmond each class provided its own fund or received it from private sources. In the Boroughs of Brooklyn and Queens the Tuberculosis Committee of these boroughs supplied it for all the classes. The children are urged to bring bread or rolls and butter to eat with their milk. In most instances they bring more than an ample supply of food.

One has only to see how anxious the children are to eat and drink to be convinced of the necessity of it. Likewise, those who do not partake of it never gain or improve as much as those who do, and in time they also join in with the rest and take their share very willingly and with great pleasure.

Health Supervision.

The number of physical defects which have not been properly corrected are considerably less than last year. Permission is in most cases willingly given by the parents to have their children properly cared for, but there is a great lack of institutional facilities to procure the required treatment. In some instances teachers have been able to interest private physicians sufficiently to get them to treat their pupils gratuitously. Because of the lack of medical facilities and the inability of many to pay for private treatment, many children whose parents consent to treatment cannot be cared for.

The social service work of the teachers and nurses has increased decidedly. The supervising inspector of open-air classes has roused their interest in this part of the work and proved the true value it has in procuring the desired results. The teachers now all consider it an essential part of their duties.

The supervising inspector of open-air classes held the usual meetings with the teachers of these classes and gave a course of lectures on the medical aspect of this work, so that the teachers should have a working knowledge of this phase of the work to assist them in carrying out their duties with intelligence.

The home conditions have received a great deal of attention, and the results are very satisfactory. The teachers and nurses have been able to interest most of the mothers to correct any faulty conditions they found and, what is most important, to have the children observe at home the same routine on days there are no school sessions, as they carry out in school. Most of the children take extra feedings and observe a rest period at home on days there is no school session. This has required a great many home visits by the teachers and nurses, besides the mothers' meetings.

The waiting list is maintained in every school by the medical inspector. There is no difficulty in procuring enough proper types of cases or in procuring parents' consents to have these children transferred to an open-air class.

The supervising inspector of open-air classes has visited all the classes systema-

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tically and has held conferences with the principals, teachers, supervising medical inspectors, supervising nurses, medical inspectors and nurses in reference to the classes. He has explained to them the various phases of the work and especially questions of importance concerning their own classes. He has examined the records and explained to the inspectors and nurses all errors found. He has attended and addressed many parents' meetings.

As previously noted in past years, the essentials of this work are fresh air, food, light, correction of physical defects that retard growth and development, and hygienic home and living conditions. None of these can be slighted, and all must be observed to procure satisfactory and lasting results.

Our health supervision is along the right lines, and our results depend entirely upon the fact of how efficiently the work can be carried out.

Results:

The figures submitted give the best proof of results:

Work in the Open-Air Classes of the Public Schools of New York City.

Number of schools with open-air classes		78
Number of open-air classes		110
Register of classes		2,705
Number of pupils examined		3,388
Boys	1,423	
Girls	1,965	
Number found with defective vision		451
Glasses obtained		372
Number found with defective hearing		36
Treated		27
Number found with defective teeth		1,811
Treated		1,134
Number found with defective nasal breathing		396
Treated (operation)		161
Number found with hypertrophied tonsils		478
Treated (operation)		201
Number found with defective nutrition		2,855
Improved in open-air classes		2,618
Number found with cardiac disease		96
Treated		96
Number found with pulmonary disease		72
Treated		67
Number found with orthopedic defects		86
Treated		86
Number found with nervous affections		31
Treated		31
Total number of children discharged from classes		683
Total number of pretubercular children		628
Total number who gained		3,161
Total number who did not gain		214
Total number who lost		23

Work of Medical Inspectors.

Inspections	743
Regular physical examinations	3,688
Re-examinations	9,674

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Work of Nurses.

Contagious Diseases:	
Inspections	45,167
Instructions and treatments	12,344
Physical Defects:	
Instructions at school	12,545
School consultations with parents	1,612
Cases terminated	926
Visits:	
For contagious diseases	394
For physical defects	4,639
To dispensaries	241
To lectures	237

Improvement of Children.

The method of weighing the children has improved and is now uniform, so that the data are accurate. No child is considered to have improved unless a gain of at least half a pound a month is made. The average gain during the year was more than eight and a half pounds. Those who have not made a normal average gain are studied by the medical inspectors to ascertain the cause of the failure to gain. In most instances this is remedied and a gain quickly established.

The children show a proportionate gain according to the temperature—the lower the temperature, the greater the gain. This seems to prove that it is not only fresh air, but also a low temperature that is required to procure a rapid gain in weight. This appears to be due to the fact that the appetite is remarkably increased during cold weather. With the first signs of spring, the children fail to gain as rapidly, and one can readily determine that their appetites immediately decrease. This is an observation that has always been noted by those closely following this work.

Open-Air Scholarship Record.

The school progress of the children in the open-air classes is perhaps best demonstrated by the following table, the data for which was supplied by the teachers of the open-air classes:

Grades Advanced.			*Progress as Compared to Previous Record.*		
More Than One Grade.	One Grade.	Less Than One Grade.	More Rapidly.	Same Rate.	More Slowly.
277	2,802	309	840	2,520	28

The few children who failed to progress at least as well as they did in their former classes are backward children. It is readily appreciated that a mental defective cannot progress pedagogically in an open-air class where the individual instruction he requires cannot be offered to him, even though his physical condition be brought to normal. The classes have too many grades to permit the teachers to give much individual instruction.

Results of Work in Open-Air Classes.

Last year a report was submitted of 367 children who were followed up after discharge from open-air classes. These children were followed up again this year, and it

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has been found that every one of them has continued to remain in good physical condition, able to carry out the work of his or her regular grade.

This year 683 children were discharged from the open-air classes as fit to proceed in a regular class. Of this number it has been possible to follow up 491 to the end of this school year, with the following results:

Cases Discharged from Open-Air Classes.

Gained Weight.	Remained Same Weight.	Lost Weight.	Scholarship Improved.	Same.	Worse.
417	2	0	116	311	0

It has not been necessary to return a single child, discharged during the year, to an open-air class because of loss in weight or because the physical condition became so bad that they were unable to carry out successfully the work in a regular class. These results are undoubtedly due to the fact that the medical inspectors exercise great care in selecting children to be discharged from open-air classes, and to the further fact that the children continue to live as they were taught to do in the open-air classes.

Summer Vacation.

The Association for Improving the Condition of the Poor cared for five hundred boys of the open-air classes at their summer camp at Southfield, N. Y., during the summer of 1918. They are to do the same again this summer for a like number of boys. Those who had this splendid opportunity, all showed the benefits of their stay in the country.

The Tuberculosis Committee of the Boroughs of Brooklyn and Queens opened a camp on Long Island and will care for seventy-five girls of their boroughs, all selected from the open-air classes, during the summer.

All the members of the Bureau of Child Hygiene whose work brings them in touch with the open-air classes take this opportunity to express their thanks for the hearty co-operation of the Associate City Superintendent in charge of special classes, as well as to the principals and teachers, the various committees on prevention of tuberculosis and their respective supervisors, who follow up this work so closely.

The frequency that parents appeal to the inspectors, nurses and teachers to keep their children in these classes because they have improved so much proves again its value.

The results of children who have been discharged show that in most instances the gain they have made is lasting, if not permanent.

All children improve physically.

Most of them improve in school work besides.

All learn hygiene living conditions.

All follow rules to maintain health.

Most have their physical defects corrected.

Cardiac cases markedly improve.

Arrested cases of tuberculosis have no relapses.

Exposed cases to tuberculosis maintain good health and do not acquire the disease.

They learn to eat proper food and to like it.

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SUPERVISION OF MIDWIVES AND OF CHILDREN BOARDED IN PRIVATE HOMES.

By S. JOSEPHINE BAKER, M. D., *Director,*
and
JACOB SOBEL, M. D., *Assistant Director.*

Bureau of Child Hygiene.

The need of private homes for the board and care of children has been abnormally acute during the past year, because of the unsettled economic and social conditions, and these factors have made it exceedingly hard to obtain them. In the past, the foundling keepers have been just able to meet the cost of food and clothing from the compensation, but the increased cost of food and clothing and the scarcity even of these necessities has decreased the number of those applying for permits as shown by the following table:

Number of Permits in Force December 31, 1911 *to* 1919, *inclusive.*

1911	2,027
1912	2,835
1913	3,123
1914	4,234
1915	4,740
1916	5,330
1917	5,698
1918	3,238
1919	2,798

Routine Procedure in the Licensing and Supervision of Homes.

Previous to 1918, homes were given permits for a maximum number of children. During 1918 the policy was changed to issuing permits for a minimum number of children. It was felt that in many instances, even with this change of procedure, that permits were issued for a larger number of children than the home was capable of accommodating. Therefore, in 1919, permits were issued for the care and board of one or two children, and where a permit was requested for three or more, two inspections were made by different medical inspectors, and the permit was issued for the smaller number. It is believed that this has placed a check on the overcrowding of homes and has improved the conditions under which the children live and facilitated their care not only by the permit holder, but by the Department.

Classification of Homes.

Homes are classified according to their adaptability to the care of breast fed and artificially fed babies under two years of age and children from two to six years of age and are graded according to their general moral and sanitary condition. This grading and classification of homes has facilitated the placing of children.

Co-opertion with Other Agencies.

This Division has actively co-operated with the Department of Public Charities, the Babies' Welfare Association and other agencies placing children. Lists of homes properly classified and graded have been furnished. The Association for the Preven-

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tion of Cruelty to Children has been furnished a monthly list of new permit holders, and this organization has greatly aided the Department in following up those who have moved or who have obtained permits through false statements. The Division has also co-operated with the Association in the prosecution of those violating the rules and regulations governing the board and care of children. Through the activities of this Association the Department has been able to remove children from undesirable homes on short notice. The home boarding children received from parents or relatives continues to be the greatest problem of the Department. It is among these that there is the greatest neglect and violation of the rules and regulations governing the board and care of children. Many of these delinquencies have been brought to court, but with very little result. An exception to this is a case of a foundling keeper of the Borough of Brooklyn who had constantly violated the regulations for a period of four years. She had been brought to court no less than four times, but had always been able to have the case dismissed or prolonged until it was finally dropped. She boarded children without a permit, and when a permit was granted boarded more than allowed, openly defying the Department. This woman happened to live in a neighborhood where a large number of permits were in force, and her attitude toward the Department was demoralizing. Finally her case came up before a Magistrate who was particularly interested in child welfare, and he went into it in detail, with the result that she was convicted of violation of the Sanitary Code and fined. This particular case required a great deal of preparation and time, which was compensated for, as it improved the morale among all of the foundling keepers and also gave the inspectors and nurses confidence in enforcing the regulations.

Registry Kept by Foundling Keepers.

During 1919 a special effort was made to have foundling keepers maintain their registry of children boarded as required by the state law and the Sanitary Code. This registry has aided the Department in fixing the responsibility for those who placed children to board and has also been a check on the visits of the nurse and inspector.

Inter-departmental Co-operation.

Institutions and agencies placing children to board have been urged to avail themselves of the facilities offered in the care and feeding of infants and children at the Department of Health Baby Health Stations. Many cases of malnutrition, a common condition in the homes of those boarding private children, have been cured as a result of the supervision by the Baby Health Station doctor and nurse. Particular mention should be made of the excellent work done at the Baby Health Station, 2155 Fifth avenue, in this respect. The division nurses and inspectors have actively co-operated with the Bureau of Preventable Diseases by reporting infection and possible tuberculosis in the homes of foundling keepers. Every effort has been made to increase the number of available wet nurses by requesting mothers of still-born babies and mothers of babies who have died to wet-nurse the child of another. These mothers are required to submit to an examination of their blood before they are allowed to receive a baby.

Study of Permits to Board and Care for Children.

Believing that there were a large number of permits in force which were not utilized at all or to a lesser extent, a study of all permit holders was made with the following results (table showing permits in force in relation to the number of children actually in board):

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	Number of Permits in Force	Number of Children Allowed on Same	Number of Permits Inactive	Number of Children Actually in Board						Total
				1	2	3	4	5	6	
1.	836	836	319	517	....	....	....	....	....	517
2.	1,072	2,144	314	318	880	....	....	....	....	1,198
3.	587	1,761	138	74	220	795	....	....	....	1,089
4.	222	888	40	8	36	108	480	....	....	632
5.	71	355	8	1	8	48	44	155	....	256
6.	10	60	2	....	....	....	12	15	12	39
Total,	2,798	6,044	821	918	1,144	951	536	170	12	3,731

NOTE.—The number noted under "total" is the sum of the numbers listed under 1, 2, 3, etc.

This table shows of 2,798 permits in force 821 were not utilized. The largest number of permits were for two children and were utilized to the greatest extent; that a total of 6,044 children were allowed to board on 2,798 permits, and that there were actually in board 3,731 children on 1,977 active permits, an average of nearly two children per permit.

Recommendations for the improvement in the methods of control of private homes boarding children:

1. That all agencies placing children to board be required to obtain a permit to do so, and that those holding permits to board children be required to receive children only from agencies having a license to place them.

2. That the City compel all foundling keepers receiving City charges under two years of age to register them at the nearest Department of Health Baby Health Station and attend the station regularly.

3. That when the permit is mailed to a foundling keeper a copy of the rules and regulations governing the board and care of children accompany it, or else have the rules and regulations printed on the reverse side of the permit. Also that a circular of infant and child care with the addresses of the various Baby Health Stations accompany each permit.

Delinquencies of Foundling Keepers.

During 1919 a total of 19 permits were revoked for cause. Two hundred and fifty complaints were received regarding foundling keepers and were investigated.

Supervision of Midwives.

During 1919 the Division tried to maintain an efficient control of the practice of midwives in spite of the fact that conditions throughout the city were abnormal; many physicians were still in war service; hospitals were overcrowded and the birth rate abnormally high, through educational propaganda regarding the employment of only those midwives who are well trained and who reflect their training in their personal appearance. This educational propaganda has resulted in the elimination of the old type of midwife and the increased utilization of the better trained type. With these handicaps the actively practicing midwives have delivered not quite as many cases as formerly in the entire city, but have delivered more cases per midwife. Still there has been no increase in sepsis or stillbirths. The following table shows the extent of the practice of midwives, years 1909 to 1919, inclusive:

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Year.	No. Midwives Registered.	No. Births Attended by Midwives.	Per Cent. of Total Births.
1909	3,131	49,616	40.35
1910	1,515	51,996	40.28
1911	1,488	51,756	38.48
1912	1,325	52,743	38.88
1913	1,488	50,364	37.27
1914	1,488	52,997	37.69
1915	1,469	49,915	35.34
1916	1,799	46,487	33.78
1917	1,656	47,525	33.6
1918	1,612	16,977*	28.6*
1919	1,695	41,876	32.1

* Manhattan.

Suppurative Eye Cases.

This Division has been delegated in the control of suppurative eye conditions which are reportable to the Department of Health under Section 91 of the Sanitary Code. A tabulation of the cases reported shows the following:

Suppurative Eye Diseases Among Infants.

	1918.	1919.
Number of suppurative eye cases reported	35	57
Reported by midwives	25	27
Reported by physicians	4	9
Reported by institutions	2	7
Reported by other organizations	4	14
Number of cases cured	32	49
Number of cases blind	..	..
Number of cases partially blind	..	..
Moved and condition not known	3	8

True Ophthalmia.

Number of cases reported	17	27
Reported by midwives	5	2
Reported by physicians	5	7
Reported by institutions	5	18
Reported by other organizations	2	..
Number of cases cured	10	20
Number of cases blind	..	2*
Number of cases partially blind	..	..
Moved, condition unknown	7	5

* Died.

A review of the foregoing table is gratifying, as it shows the infrequency with which the midwife meets with true ophthalmia and that they are using the prophylactic drops in most instances. Also that they are reporting suppurative eye conditions, as the number of simple suppurative eye cases reported has increased from year to year, and the number of cases of true ophthalmia has decreased. The results of the treat-

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ment of these cases are also very gratifying. It is known that a large number of cases visiting clinics and hospitals are not reported, and a questionaire has been sent to each hospital and clinic requesting data as to the suppurative eye cases treated. This information has been compiled and will form a basis for a better co-operation between those institutions interested in the prevention of suppurative eye conditions and blindness, namely, the Department of Health and those who treat diseases of the eye.

Puerperal Sepsis.

As in the case of suppurative eye conditions, this Division has also been delegated in the control of puerperal sepsis. All reports of this illness are forwarded to the Division, as are the certificates of death from childbirth. The following table gives the facts regarding puerperal sepsis for the years 1915 to 1919, inclusive:

Puerperal Sepsis Cases.

Year	Attended by Midwife		Attended by Physician		Attended by Hospital	
	Fatal	Non-fatal	Fatal	Non-fatal	Fatal	Non-fatal
1915.....	43	0	226	2	...	21
1916.....	50	0	195	16	...	135
1917.....	40	1	156	20	33	70
1918.....	15	1	61	18	84	114
1919.....	14	2	41	30	102	72

The foregoing shows that there has been a marked decrease in fatal sepsis among cases cared for by midwives, especially during the years 1918 and 1919. This decrease has also occurred in the practice of private physicians. There has been an increase in the number of deaths from sepsis in the cases attended in hospitals. This is explained, it is believed, by the educational propaganda regarding the children of all primipara and abnormal cases in hospitals.

Stillbirths.

During 1919 midwives attended a total of 42,204 living and stillbirths, 41,876 living and 328 stillbirths, showing a stillbirth rate of .078. This is exceedingly low, as the obstetrical authorities state that the stillbirth rate ranges from two to five per cent.

Delinquencies of Midwives.

During the year, 290 homes of midwives were reported as uncleanly; 208 midwifery bags were reported to be in an insanitary condition; 25 midwives were reported as personally unclean; 2 midwifery permits were revoked for cause; 5 midwives were arrested and found guilty as charged; one was sent to prison. Midwives registered 626 expectant mothers for prenatal care. The status for New York City in the control of the practice of midwifery is shown by the fact that representatives were sent to New York to observe our methods of control from Scotland, Dutch West Indies, New Zealand, and from many cities of our own country. A branch of the Welfare Department of the United States Government requested information as to our methods of control of criminal practice, stating that abortionists were leaving New York for practice in other cities.

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SUMMARY OF VITAL STATISTICS FOR THE MONTH OF SEPTEMBER, 1920.

The mortality report of the month just closed indicates that the health conditions of the city were favorable. The crude death rate was .17 higher than the rate of September of last year, but this increase is so small as to be negligible. After the war and with the resumption of immigration it was feared that the city might be visited by epidemics of the acute infectious diseases, but up to the present time the morbidity and the mortality of these diseases has remained practically normal. During the past month there was a very definite decline in the mortality of diphtheria and influenza. There were but 4 deaths reported from measles, and there were but 10 deaths from scarlet fever, which, however, was an increase of 5, as compared with September, 1919. On the other hand, the mortality of typhoid fever rose to 31 during the month, as compared with 16 in September of last year. There were, however, 3 fewer cases of typhoid reported during the month than during September, 1919—196—as compared with 199. Whooping cough which has been somewhat prevalent this year caused 69 deaths during September, as compared with 16 during September, 1919. The number of cases of whooping cough reported during the month were 534, against 145 reported in the corresponding month of last year.

Pulmonary tuberculosis, as well as all other forms of tuberculous disease, continues to show a decline from the figures of last year. A most noteworthy fact disclosed by the report is a decrease of almost 100 deaths from congenital debility. In view of the increased number of births during this year, as compared with last year, this saving of life is particularly commendable and is no doubt in large measure attributable to the prenatal work now being carried on in the city. It is rather discouraging, however, to find an increase of approximately 50 deaths from diarrhœal diseases among children under five. There was an unexplainable increase of 114 deaths from organic heart disease and nephritis; 1,068 deaths were reported from these causes during the month. The deaths from violence reported during the month surpassed the number reported during September of last year. Of the 386 reported from this cause, 319 resulted from accidents and 67 were homicide. Among this latter group were classified the deaths of the victims of the explosion in Wall street. Automobile accidents continue to cause a large number of the accidental deaths.

The total number of deaths reported in the Greater City during the month was 4,640, equivalent to a rate of 9.20. Included among these deaths were those of 134 non-residents, which, if deducted, would reduce the mortality of the city to 8.93.

During the month 10,869 births were reported—an increase of more than 250 over the number reported in September of last year. The birth rate for the year was 21.55. The highest rate was reported from the Borough of Richmond, to wit: 31.49, and the lowest from Manhattan, 20.12; Brooklyn reported a rate of 23.05 and Queens 22.75; The Bronx fell almost to the level of Manhattan, with a rate of 20.15.

The marriage rate slumped during the month to 8.80, 4,441 marriages being reported in the Greater City, against 4,809 during September of last year. The marriage rate has always been an interesting barometer of financial conditions. The present rate indicates the effect of the high cost of living and the shortage of houses.

The outstanding features of the morbidity report for the month was an increase in the number of cases of whooping cough from 145 reported in September, 1919, to 534 reported during the past month. There was an increase of almost 200 in the number of cases of pulmonary tuberculosis reported. This acute rise in the number

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of cases of tuberculosis is especially noteworthy in the face of the continued decline in the deaths from this cause. It causes one to inquire as to what extent, if any, the housing condition has been responsible for this increase.

Another noteworthy feature in the morbidity report was the decline in the number of cases of syphilis reported from 1,949 in September, 1919, to 1,460 during the past month. It is possible that the peak of the prevalence of this disease following the war has been passed and that its incidence is on the decline. This very pleasing explanation, however, should not be accepted until it has been carefully checked up, lest this decline be but an apparent one due to the waning of our interest in this disease, accompanied by a falling off in registration.

POPULATION, MARRIAGES, BIRTHS AND DEATHS, SEPTEMBER, 1920.

Boroughs.	Population U. S. Census April 15, 1910.	Estimated Population July 1, 1920.	Certificates Received and Tabulated.			Rate per 1,000 Based on Department Estimate.			Corrected Death Rate. **	Corr'td Death Rate Correspon'g Month 1919.
			Marriages	B'ths	* D'ths	Marriages.	B'ths.	D'ths.		
Manhattan	2,331,542	2,829,239	2,079	4,675	2,123	8.95	20.12	9.13	8.94	8.70
The Bronx.	430,980	669,233	583	1,127	525	10.60	20.50	9.55	8.95	9.12
Brooklyn..	1,634,351	2,117,908	1,424	4,010	1,529	8.19	23.05	8.79	9.16	8.93
Queens....	284,041	419,506	284	784	316	8.24	22.75	9.17	9.95	10.49
Richmond.	85,969	105,559	71	273	147	8.19	31.49	16.95	15.45	13.86
N. Y. City.	4,766,883	6,141,445	4,441	10869	4,640	8.80	21.55	9.20	.....	9.03

*Includes 134 deaths of non-residents of the city, which, if deducted, would give a death rate for the city of 8.93 per 1,000.

**Corrected by redistributing deaths according to borough of residence.

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REGISTERED MORTALITY FROM PRINCIPAL CAUSES.

SEPTEMBER, 1920.

	Manhattan.		The Bronx.		Brooklyn.		Queens.		Richmond.		City of New York.	
	Sept.		Sept.		Sept.		Sept.		Sept.		Sept.	
	1920	1919	1920	1919	1920	1919	1920	1919	1920	1919	1920	1919
Total, all causes	2078	1986	492	484	1593	1519	343	350	134	118	4640	4457
1. Typhoid Fever	13	7	2	4	10	4	2	1	4	...	31	16
3. Malarial Fever	1	1	...	...	....	1	....	...	...	...	1	2
4. Typhus Fever	....	....	...	...	....	....	....	...	...	...	....	....
5. Measles	3	5	...	...	....	....	1	...	...	...	4	5
6. Scarlet Fever	6	2	1	...	3	3	...	...	...	...	10	5
7. Whooping Cough	37	6	12	2	16	7	1	1	3	...	69	16
8. Diphtheria and Croup	8	15	5	5	11	14	4	7	1	1	29	42
9. Influenza	10	10	1	1	3	12	1	...	...	1	15	24
10. Cholera Nostras	....	....	...	...	....	....	...	...	...	...	....	....
11. Poliomyelitis	3	....	...	...	....	1	2	...	1	...	6	1
12. Other Epidemic Diseases	6	5	1	...	6	4	1	2	...	...	14	11
13. Tuberculosis Pulmonalis	203	238	46	46	114	139	35	36	11	15	409	474
14. Tuberculous Meningitis	14	27	...	8	7	7	2	5	1	1	24	48
15. Other forms of Tuberculosis	15	21	4	2	14	9	3	3	...	2	36	37
16. Cancer, Malignant Tumor	193	178	55	55	128	144	33	40	13	12	422	429
17. Simple Meningitis	12	8	1	...	3	7	1	...	1	...	18	15
Of which												
17a. Cerebro Spinal Meningitis	7	5	...	...	1	5	...	...	1	...	9	10
18. Apoplexy and Softening of the Brain	29	23	4	6	17	17	2	7	4	2	56	55
19. Organic Heart Diseases	296	281	84	91	293	240	52	46	17	13	742	671
20. Acute Bronchitis	12	6	...	1	12	13	...	1	1	...	25	21
21. Chronic Bronchitis	3	3	2	3	5	3	1	...	...	1	11	10
22. Pneumonia (exc. Broncho Pneumonia)	56	52	15	6	53	33	9	8	2	3	135	102
22a. Broncho Pneumonia	56	75	17	20	42	41	13	9	3	1	131	146
23. Other Respiratory Diseases	13	7	3	3	5	10	....	1	3	4	24	25
24. Diseases of the Stomach (Cancer excepted)	12	6	2	2	6	11	2	4	1	...	23	23
25. Diarrhoeal Diseases (under 5 years)	159	146	35	26	145	126	26	21	13	10	378	329
26. Appendicitis Typhlitis	21	29	4	8	18	24	2	4	1	1	46	66
27. Hernia, Intest'l Obstruction	26	13	7	3	20	21	4	1	1	1	58	39
28. Cirrhosis of Liver	13	22	2	4	4	11	2	2	...	...	21	39
29. Bright's Disease and Nephritis	122	99	24	29	138	117	28	29	14	9	326	283
30. Diseases of Women (not Cancer)	6	11	2	...	16	4	2	...	...	...	26	15
31. Puerperal Septicaemia	2	2	...	2	1	6	1	3	...	...	4	13
32. Other Puerperal Diseases	18	14	2	4	15	12	...	...	1	...	36	30
33. Congenital Debility and Malformations	92	152	25	27	96	115	21	29	11	14	245	337
34. Old Age	14	10	...	1	4	2	4	3	1	...	23	16
35. Violent Deaths	204	144	27	28	119	106	25	36	11	8	386	322
a. Sunstroke	....	....	...	...	....	....	...	...	...	...	....	....
b. Other Accidents	152	129	27	28	105	99	24	32	11	8	319	296
c. Homicide	52	15	...	...	14	7	1	4	...	...	67	26
36. Suicide	22	25	6	7	19	16	2	4	...	...	49	52
37. All other causes	371	340	102	89	248	238	61	47	15	17	797	731
38. Ill-defined causes	7	3	1	1	2	1	...	...	...	2	10	7

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REGISTERED MORTALITY FROM ALL CAUSES AND CERTAIN INFECTIOUS DISEASES, BY WARDS, SEPTEMBER, 1920.

BOROUGH OF MANHATTAN.

Wards.	Area in Acres.	Population U. S. Census 1910.	Number of Persons to the Acre.	Typhoid Fever.	Smallpox.	Measles.	Scarlet Fever.	Diphtheria and Croup.	Pulmonary Tuberculosis.	Lobar Pneumonia.	Broncho-Pneumonia.	Diarrhoeal Diseases.	All Causes.	Deaths of Children Under 5 Years.
1	154.0	9,750	63.0	..	..	..	..	..	4	..	..	1	50	4
2	81.0	933	11.5	..	..	..	..	..	..	..	..	..	1	..
3	95.0	1,915	20.2	..	..	..	..	..	..	..	..	..	1	..
4	83.0	21,336	257.1	..	..	..	..	1	..	1	..	1	22	7
5	168.0	5,666	33.7	..	..	..	..	..	..	..	..	1	7	..
6	86.0	19,670	228.7	..	..	..	..	..	7	..	1	..	22	4
7	198.0	102,101	515.6	..	..	..	..	..	4	1	..	5	53	11
8	183.0	33,182	181.4	..	..	..	..	1	2	1	2	2	27	9
9	322.0	64,909	201.6	..	..	1	..	..	4	2	..	4	64	13
10	110.0	66,439	604.0	..	..	..	1	..	1	2	2	5	47	13
11	196.0	136,548	696.7	..	..	..	..	..	4	3	1	5	54	13
12	6,154.0	806,648	131.1	5	..	1	2	2	69	16	26	53	774	196
13	107.0	64,651	604.3	..	..	..	..	..	2	..	4	..	26	4
14	96.0	38,321	399.3	2	..	..	..	1	1	2	1	8	39	16
15	198.0	30,584	154.5	..	..	..	..	..	2	..	..	..	16	4
16	349.0	55,926	160.2	..	..	..	..	..	12	2	..	5	74	15
17	331.0	172,334	520.6	..	..	..	2	1	10	2	7	14	123	35
18	450.0	62,821	139.6	1	..	1	..	1	4	4	2	8	79	16
19	1,481.0	292,950	197.7	1	..	..	1	1	28	3	2	31	240	65
20	444.0	73,308	165.1	2	..	..	..	..	13	..	..	4	65	12
21	411.0	62,345	151.7	1	..	..	..	..	11	6	2	2	64	10
22	1,529.0	209,154	136.8	1	..	..	..	..	25	11	6	19	230	43
Total....	13,226.0	2,331,491	176.3	13	..	3	6	8	203	56	56	168	2,078	490

BOROUGH OF BROOKLYN.

1	233.0	21,851	93.8	..	..	..	..	..	..	..	..	1	20	4
2	97.7	6,894	70.6	..	..	..	..	..	2	..	..	1	9	3
3	161.4	15,910	98.6	..	..	..	..	..	..	..	..	1	10	2
4	111.3	10,477	94.1	..	..	..	..	..	2	..	1	1	13	5
5	119.4	19,401	162.5	..	..	..	..	..	..	1	1	2	15	7
6	302.9	46,437	153.3	..	..	..	..	..	4	1	1	7	47	12
7	458.5	44,037	96.0	..	..	..	..	..	3	..	1	6	40	11
8	1,843.2	82,687	44.9	1	..	..	1	2	9	3	2	9	92	30
9	623.6	50,501	81.0	1	..	..	..	..	7	3	2	2	55	14
10	318.7	41,238	129.4	..	..	..	..	..	4	2	1	1	32	11
11	252.6	21,659	85.7	..	..	..	..	..	1	..	1	3	36	8
12	663.1	29,262	44.1	..	..	..	..	2	6	4	4	8	81	18
13	230.3	30,091	130.7	..	..	..	..	1	2	1	1	4	21	6
14	282.6	33,329	117.9	1	..	..	..	..	5	2	3	9	49	21
15	244.8	35,887	146.6	..	..	..	1	..	3	3	3	5	38	17
16	244.8	68,244	278.7	2	..	..	..	..	3	1	5	9	46	22
17	823.3	70,346	85.5	..	..	..	..	2	6	1	1	7	65	18
18	873.0	35,708	40.9	..	..	..	1	..	4	2	..	4	35	9
19	413.8	44,860	108.4	..	..	..	..	..	2	2	3	4	28	11
20	461.4	27,463	59.5	..	..	..	..	..	1	4	..	2	32	5
21	483.2	78,741	163.0	..	..	..	..	..	1	1	1	3	53	15
22	1,361.6	81,283	59.7	..	..	..	..	1	1	5	1	13	109	28
23	736.0	65,561	89.1	..	..	..	..	1	7	2	2	6	70	17
24	1,198.5	80,466	67.2	..	..	..	..	..	3	1	..	11	85	17
25	567.8	63,597	112.0	..	..	..	..	..	9	..	..	3	44	8
26	3,590.2	177,963	49.5	3	..	..	..	1	6	3	3	14	163	44
27	400.7	76,000	189.6	..	..	..	..	..	5	3	1	4	41	9
28	884.4	77,451	87.6	..	..	..	..	1	6	3	..	5	74	11
29	3,800.0	72,351	19.0	..	..	..	..	..	6	1	1	4	57	13
30	5,401.1	76,406	14.1	2	..	..	..	..	3	4	3	2	99	15
31	6,312.3	30,988	4.9	..	..	..	..	..	2	..	..	2	25	6
32	5,479.5	17,419	3.2	..	..	..	..	..	1	..	..	1	9	2
Total....	38,977.8	1,634,508	41.9	10	..	..	3	11	114	53	42	154	1593	419

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BOROUGH OF THE BRONX.

Wards.	Area in Acres.	Population U. S. Census 1910.	Number of Persons to the Acre.	Typhoid Fever.	Smallpox.	Measles.	Scarlet Fever.	Diphtheria and Croup.	Pulmonary Tuberculosis.	Lobar Pneumonia.	Broncho-Pneumonia.	Diarrhoeal Diseases.	All Causes.	Deaths of Children Under 5 Years.
23	4,267.0	268,880	63.0	..	..	..	..	3	24	9	6	18	250	64
24	22,255.8	162,062	7.3	2	..	..	1	2	22	6	11	20	242	52
Total.	26,522.8	430,942	16.2	2	..	..	1	5	46	15	17	38	492	116

BOROUGH OF QUEENS.

1	4,650.0	61,763	13.3	..	..	1	..	..	6	1	2	6	56	13
2	14,700.0	105,219	7.2	..	..	..	..	3	7	3	5	6	81	21
3	22,000.0	37,171	1.7	..	..	..	..	1	2	1	2	4	54	9
4	36,600.0	67,412	1.8	2	..	..	..	..	19	2	2	12	125	29
5	3,770.0	12,476	3.3	..	..	..	..	..	1	2	2	4	27	4
Total.	81,720.0	284,041	3.5	2	..	1	..	4	35	9	13	32	343	76

BOROUGH OF RICHMOND.

1	3,340.0	27,201	8.1	1	..	..	..	..	7	1	..	4	45	12
2	4,130.0	16,871	4.1	3	..	..	..	..	3	1	1	2	25	5
3	10,050.0	19,812	2.0	..	..	..	..	..	1	..	1	4	34	9
4	8,180.0	10,662	1.3	..	..	..	..	1	..	..	..	4	15	4
5	10,900.0	11,423	1.0	..	..	..	..	..	..	..	1	..	15	3
Total.	36,600.0	85,969	2.3	4	..	..	..	1	11	2	3	14	134	33

DEATHS ACCORDING TO AGE GROUPS, SEPTEMBER, 1920.

Boroughs.	All Ages.	Under 1 Year.	1 Year and under 2.	Under 5 Years.	5-15 Years.	15-25 Years.	25-45 Years.	45-65 Years.	65 Years and over.	Colored.	Chinese.
Manhattan.	2,078	352	71	490	86	132	403	541	426	142	9
The Bronx..	492	86	13	116	19	20	74	127	136	6	..
Brooklyn...	1,593	307	51	419	64	93	278	403	336	39	1
Queens.....	343	58	9	76	15	21	62	93	76	6	..
Richmond..	134	28	3	33	5	8	22	23	43	1	..
City of N.Y.	4,640	831	147	1,134	189	274	839	1,187	1,017	194	10

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INFECTIOUS DISEASES.

Number of Cases Reported in the City of New York, by Boroughs, During September, 1920, and September, 1919.

	Manhattan.		The Bronx.		Brooklyn.		Queens.		Richmond.		City.	
	September.		September.		September.		September.		September.		September.	
	1920	1919	1920	1919	1920	1919	1920	1919	1920	1919	1920	1919
Typhoid Fever	75	67	15	37	83	72	16	21	7	2	196	199
Typhus Fever	....	....	....	....	....	....	....	....	....	....	....	....
Malaria	6	1	....	2	....	3	2	....	1	....	9	6
Small Pox	1	1	....	....	....	....	....	....	....	1	1	2
Measles	42	85	5	13	12	13	1	12	7	2	67	125
Scarlet Fever	68	63	39	20	49	52	25	9	2	....	183	144
Whooping Cough	267	49	53	16	141	62	43	10	30	8	534	145
Diphtheria and Croup	210	232	73	87	171	196	58	54	10	13	522	582
Leprosy	1	....	....	....	....	....	....	....	....	....	1	....
Mumps	22	30	11	2	12	5	3	7	....	1	48	45
German Measles	4	12	....	2	3	8	....	....	1	....	8	22
Chicken Pox	45	35	6	6	21	20	2	1	....	1	74	63
Glanders	....	....	....	....	....	....	....	....	....	....	....	....
Anthrax	1	1	....	....	1	....	....	....	....	....	2	1
Rabies	....	....	....	....	....	....	....	....	....	....	....	....
Tetanus	1	....	....	....	1	1	....	2	....	....	2	3
Pellagra	....	....	....	....	....	....	....	....	....	....	....	....
Pulmonary Tuberculosis	594	286	83	90	222	330	50	56	15	13	964	775
Other Tuberculous Diseases	....	....	....	....	....	....	....	....	....	....	....	....
Syphilis	889	1,262	85	174	447	454	24	32	15	25	1,460	1,947
Gonorrhoea	191	226	16	50	216	192	3	20	2	11	428	499
Cerebro-Spinal Meningitis	18	9	....	....	4	3	....	....	1	....	23	12
Poliomyelitis	13	2	4	1	10	3	2	1	1	....	30	7
Hookworm	....	....	....	....	....	....	....	....	....	....	....	....
Trichinosis	....	....	....	....	....	....	....	....	....	....	....	....
Influenza	31	16	8	22	15	5	1	1	....	....	55	44
Pneumonias	209	27	44	10	81	6	25	1	3	1	362	45
Total	2,688	2,404	442	532	1,489	1,425	255	227	95	78	4,969	4,666

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MONTHLY METEOROLOGICAL SUMMARY.

SEPTEMBER, 1920.

Date.	Temperature. (Degrees Fahrenheit.)				Relative Humidity. (Per Cent.)	Precipitation (Inches.)		Wind. (Miles per hour.)			Sunshine.
	Maximum.	Minimum.	Mean.	Departure of Mean from Normal.	8 a.m.	Rain.	Snow.	Average Velocity.	Prevailing Direction.	Maximum Velocity and Direction.	Number of Hours.
W 1	73	61	67	— 3	64	0	0	26.4	NW	47 NW	12.6
T 2	71	53	62	— 8	57	0	0	21.1	NW	33 NW	13.0
F 3	74	55	64	— 6	57	0	0	10.4	N	17 NW	13.0
S 4	76	61	68	— 2	54	0	0	9.8	S	19 S	11.2
S 5	73	62	68	— 2	78	0	0	9.5	SE	18 SE	12.2
M 6	73	64	68	— 1	89	.01	0	11.0	E	20 NE	3.3
T 7	77	65	71	+ 2	90	.21	0	15.0	W	30 W	8.9
W 8	76	61	68	— 1	69	0	0	20.8	NW	33 NW	11.8
T 9	78	62	70	+ 2	65	T	0	9.4	S	25 S	9.7
F 10	79	64	72	+ 4	92	.90	0	18.0	W	33 S	9.7
S 11	77	64	70	+ 2	84	T	0	12.6	N	36 S	6.8
S 12	83	65	74	+ 6	85	.05	0	13.2	SW	34 S	10.4
M 13	75	60	68	+ 1	73	0	0	29.4	NW	49 NW	12.3
T 14	72	56	64	— 3	71	0	0	17.4	N	26 N	12.5
W 15	72	57	64	— 3	83	0	0	11.2	N	19 S	7.2
T 16	74	62	68	+ 2	91	T	0	19.2	SW	38 W	6.4
F 17	70	56	63	— 3	66	0	0	25.3	NW	44 NW	12.4
S 18	78	56	67	+ 1	52	0	0	23.4	SW	44 W	11.4
S 19	65	54	60	— 6	55	0	0	21.8	NW	38 W	10.5
M 20	66	47	56	— 9	61	T	0	10.4	S	17 S	11.4
T 21	68	56	62	— 3	77	.02	0	8.3	SE	16 SE	6.2
W 22	68	58	63	— 2	69	0	0	8.6	SE	14 SE	12.2
T 23	78	58	68	+ 4	76	0	0	6.6	SW	17 S	12.1
F 24	82	61	72	+ 8	78	0	0	11.7	SW	19 S	12.1
S 25	82	65	74	+10	100	T	0	8.3	S	17 S	9.4
S 26	80	68	74	+10	100	0	0	5.1	S	13 S	8.7
M 27	74	67	70	+ 7	100	T	0	10.0	SE	28 S	0.9
T 28	74	66	70	+ 7	89	.22	0	15.4	S	31 S	3.3
W 29	77	66	72	+10	67	.04	0	7.9	SE	27 SE	8.7
T 30	70	60	65	+ 3	97	1.79	0	31.7	S	80 S	.0
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Month	Mean 74.5	Mean 60.3	Mean 67.4	Blank	Mean 76	Total 3.24	Total 0.0	Mean 15.0	Prev'l'g NW	Blank	Total 280.3
Normal	73.8	59.6	66.5	Blank	78	3.59	0.0	10.1	NW	Blank	Possible 374.0

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CONTENTS: THIRTY-FOUR CASES OF HUMAN ANTHRAX.

MONTHLY BULLETIN
OF THE
DEPARTMENT of HEALTH
CITY OF NEW YORK

Public health is purchasable. Within natural limitations a community can determine its own death rate.

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ROYAL S. COPELAND, M. D., Commissioner of Health.

VOL. X. NOVEMBER, 1920. No. 11.

RENEW YOUR SUBSCRIPTION.

Those whose subscription to the Monthly Bulletin expires with the current year should send the necessary remittances to the Department at an early date. Public authorities specially concerned and certain other agencies interested in public health work receive the Bulletin free of charge.

As has been previously noted, the sole reason for making any charge is the ruling of the Post Office that only publications with a paid subscription list can secure pound postage rates.

INVESTIGATION OF THIRTY-FOUR CASES OF HUMAN ANTHRAX OCCURRING IN NEW YORK CITY DURING 1919 AND 1920

By S. DANA HUBBARD, M. D., *Superintendent*,
and
WILLIAM JACOBSOHN, B. S., M. D., *Industrial Medical Inspector*.

Division of Industrial Hygiene.

The Sanitary Code requires that all cases of anthrax be reported to the Department of Health within twenty-four hours from the time the cases are diagnosed. As soon as such notification was received, the cases described in this study were personally visited, at the place of illness, to confirm such diagnosis, and to observe the quarantine. As careful a history as obtainable was taken; and this was followed by the examination of the patient, and such action as the circumstances of the case required. Particular attention was paid to the mode of origin of the disease, for by tracing the source of infection we were enabled to control the further spread. The place of occupation of the victim was next visited, and inquiry into the particular work performed by him was made; then the suspected anthrax-infected materials were collected, analyzed, and traced to their point of origin. Finally, such instructions in preventive measures in the conduct of the individual industry, as was considered necessary, were given.

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Increased Prevalence of Human Anthrax.

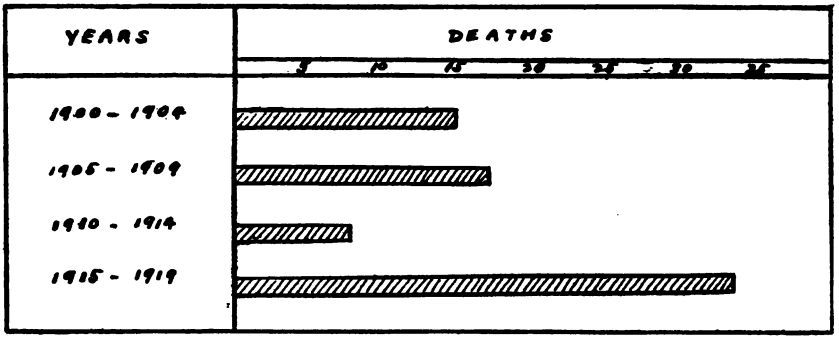
The following table and chart shows the fatal cases of human anthrax reported in New York City during the last 20 years:

Deaths from Anthrax in New York City for the Past Twenty Years.

Year	Deaths	Year	Deaths
1900	1	1905	2
1901	4	1906	3
1902	2	1907	3
1903	5	1908	4
1904	3	1909	5
Total for Five Years, 1900-1904	15	Total for Five Years, 1905-1909	17

Year	Deaths	Year	Deaths
1910	1	1915	9
1911	2	1916	3
1912	1	1917	9
1913	3	1918	4
1914	1	1919	9
Total for Five Years, 1910-1914	8	Total for Five Years, 1915-1919	34
Total for Twenty Years	74		

Twenty Years' Record of Deaths from Anthrax in New York City, Showing Increased Number in the Past Five Years.



Between January 1, 1919, and October 1, 1920, a period of one year and nine months, thirty-four cases of human anthrax were investigated. In the accompanying chart their occurrence by months is shown.

That anthrax cases are increasing is not alone shown by chart on page 251, but also by the preceding chart prepared from the deaths from anthrax in New York City for the past twenty years. It is apparent from the latter chart that there has been more than four times the number of deaths during the last five-year period, 1915 to 1919, than during the previous five-year period, 1910 to 1914.

The Secretary of the National Association of Importers of Hides and Skins informed one of us that never had such a large quantity of hides passed through this city as during the world war. Likewise, never had there been such a great demand for hair and bristles as during the last five years.

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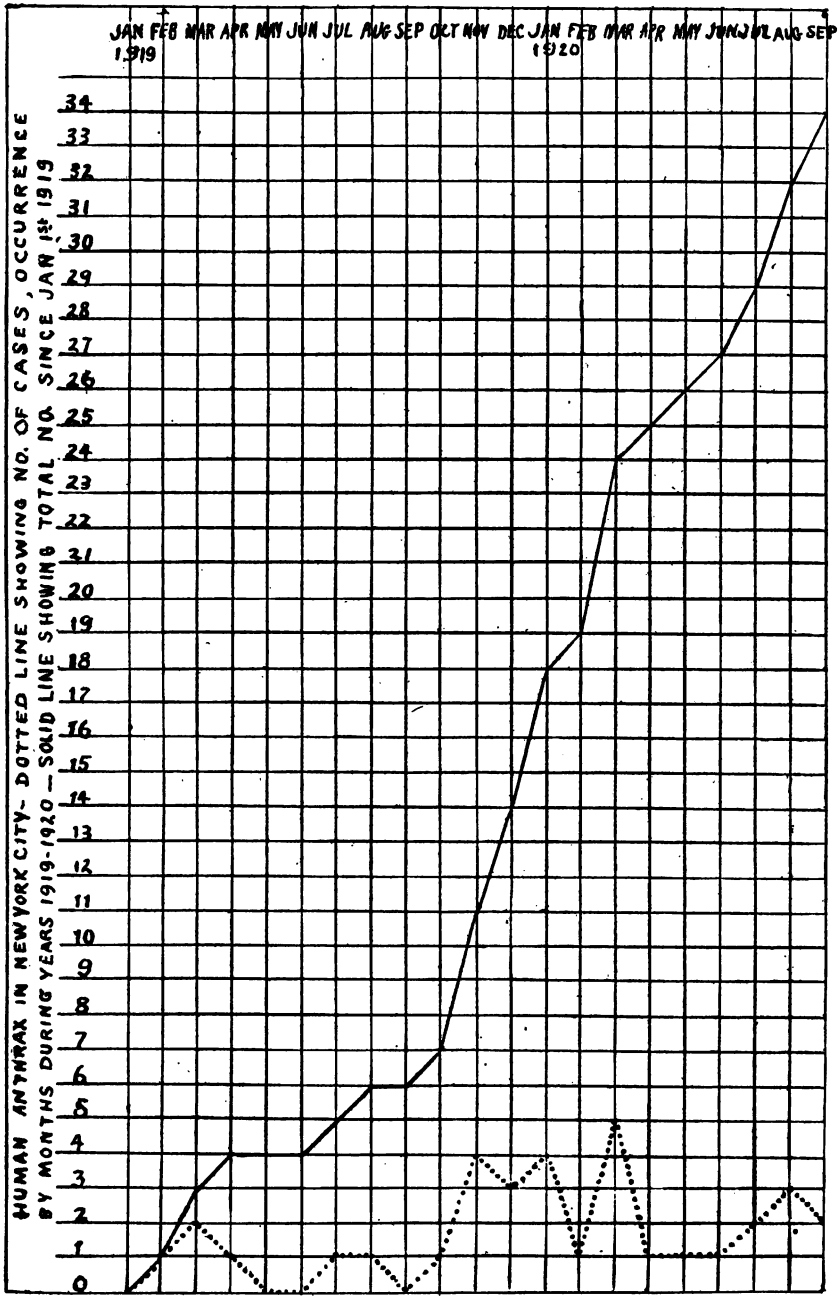

The following table presents, in chronological order, the thirty-four cases of anthrax occuring in New York City during 1919 and 1920, a period of one year and nine months, and shows briefly the age, sex, date of occurrence, occupation, source of infection, part of body affected, bacteriological findings, treatment, and termination of each case.

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Table of Thirty-four Cases of Human Anthrax.

No.	Age.	Sex.	Date.	Occupation.	Source of Infection.	Part of Body Affected.	Bacteriological Findings.	Treatment.	Termination.
1	79	M	Feb. 19	.....	New Shaving Brush..	Face.....	Positive..	.....	Death
2	20	M	Mar. '19	Sailor.....	New Shaving Brush..	Chin.....	Positive..	Chemical Cauterization, Anti-Anthrax Serum	Death
3	57	M	Mar. '19	Brush Maker.....	Hair in Factory.....	Neck.....	Positive..	Chemical Cauterization, Anti-Anthrax Serum	Death
4	46	M	Apr. '19	Fireman.....	New Shaving Brush..	Neck.....	Positive..	.....	Death
5	45	M	July '19	Paris Green Maker.....	New Shaving Brush..	Chin.....	Negative.	.....	Death
6	18	M	Aug. '19	Hospital Employee.....	Hair Brush.....	Forehead.....	Positive..	Anti-Anthrax Serum....	Recovery
7	47	M	Oct. '19	Farmer.....	New Shaving Brush..	Face.....	Positive..	Open Excision and Anti-Anthrax Serum	Recovery
8	34	M	Nov. '19	Seaman.....	New Shaving Brush..	Face.....	Positive..	Incision and Anti-Anthrax Serum	Death
9	59	M	Nov. '19	Cook.....	New Shaving Brush..	Face.....	Positive..	Excision and Anti-Anthrax Serum	Death
10	21	F	Nov. '19	Brush Maker.....	Hair in Factory.....	Neck.....	Positive..	Incision and Anti-Anthrax Serum	Recovery
11	24	M	Nov. '19	Hide Handler.....	Hides.....	Neck.....	Positive..	Excision and Anti-Anthrax Serum	Recovery
12	45	M	Dec. '19	R. R. Officer.....	Shaving Brush.....	Chin.....	Positive..	.....	Death
13	29	M	Dec. '19	Hide Handler.....	Hides.....	Neck and Chin.	Positive..	Anti-Anthrax Serum....	Recovery
14	43	M	Dec. '19	Hide Handler.....	Hides.....	Neck.....	None Made	Incision and Chemical Cauterization	Death
15	32	M	Jan. '20	Hide Handler.....	Hides.....	Neck.....	Positive..	Anti-Anthrax Serum....	Recovery
16	48	M	Jan. '20	Longshoreman.....	Shaving Brush.....	Neck and Chin.	Positive..	Anti-Anthrax Serum....	Death
17	68	M	Jan. '20	Checker in Hides Warehouse....	Hides.....	Neck.....	Positive..	Anti-Anthrax Serum....	Recovery
18	16	F	Jan. '20	House Worker.....	Table Dust Brush...	Right Wrist....	Positive..	Chemical Cauterization and Incision	Recovery

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Table of Thirty-four Cases of Human Anthrax—Continued.

No.	Age.	Sex.	Date.	Occupation.	Source of Infection.	Part of Body Affected.	Bacteriological Findings.	Treatment.	Termination.
19	63	M	Feb. '20	Brush Maker	Hair in Factory	Neck	Positive	Chemical Application and Yeast	Recovery
20	31	M	Mar. '20	House Shorer	Shaving Brush	Neck	Positive	Incision and Anti-Anthrax Serum	Recovery
21	27	M	Mar. '20	Brush Maker	Hair in Factory	Neck	Negative	Incision and Anti-Anthrax Serum	Recovery
22	45	M	Mar. '20	Hide Handler	Hides	Face and Neck	Positive	Anti-Anthrax Serum, Excision, Chemical Applications	Recovery
23	18	M	Mar. '20	Hide Handler	Hides	Face and Neck	Positive	Excision and Anti-Anthrax Serum	Recovery
24	32	M	Mar. '20	Street Cleaner	New Shaving Brush	Neck	Positive for brush, no record for lesion	Anti-Anthrax Serum	Recovery
25	48	M	Apr. '20	Hide Handler	Hides	Neck	Bacilli resembling Anthrax	Slight Incision, Anti-Anthrax Serum	Recovery
26	36	F	May '20	Milliner	Horse Hair Cloth and Braid in Millinery Shop	Chin	Positive	Anti-Anthrax Serum	Recovery
27	15	M	June '20	School Boy Making Brushes	Horse Hair in School Work Shop	Chin	Positive	Chemical Application	Recovery
28	24	M	July '20	Fireman	Shaving Brush	Face	Positive	Anti-Anthrax Serum	Recovery
29	37	M	July '20	Horse Dealer	Shaving Brush	Face	Positive	Anti-Anthrax Serum	Recovery
30	43	M	Aug. '20	Shoemaker	New Shaving Brush	Face	Positive	Anti-Anthrax Serum	Death
31	44	M	Aug. '20	Manufacturer of Celluloid Goods	Not Determined	Hand	Positive	Anti-Anthrax Serum	Recovery
32	16	M	Aug. '20	Stock Clerk in Celluloid Shop	New Shaving Brush	Face	Positive	Anti-Anthrax Serum	Recovery
33	14	M	Sept. '20	School Boy	Not Determined	Face	Positive	Anti-Anthrax Serum	Recovery
34	46	M	Sept. 20	Longshoreman	New Shaving Brush	Face	Positive	Anti-Anthrax Serum	Recovery

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Individual Histories of the Anthrax Cases Listed.

CASE 1—A retired gentleman died at the age of 79 years of anthrax. At first he was treated for a pimple on his face following a scratch, which had been lathered by a new shaving brush. Three days following the treatment by his physician, the infiltration became suddenly severe and the patient died the following day. The brush was examined and the presence of anthrax bacilli discovered.

CASE 2—A seaman died at the age of twenty years of anthrax. Having shaved himself with a new brush on his chin, where he had a small pimple, three days thereafter there developed marked edema with a temperature of 100, pulse of 100, and swelling of cervical glands. Laboratory examination of lesion showed anthrax bacilli. A sero-purulent discharge, infiltration, and an indurated abcess followed. The treatment consisted in cauterization with phenol, followed by the application of alcohol. Anti-anthrax serum was injected. The patient died two days after admission into hospital, or five days after infection. Brush was not positively identified as it passed out of the patient's hands.

CASE 3—A brush maker, for twenty years the owner of a factory for making all kinds of brushes, died of anthrax, at the age of 57 years. A small sore developed on his neck; this sore increased in size and was accompanied by intense swelling. Two days thereafter, he saw his doctor, who cauterized the lesion with iodine and phenol. The following day, the pustule had increased in size; the doctor then made the diagnosis of anthrax; temperature was 99.6, pulse was 92, and respiration 26. Anthrax serum was injected, but the patient, the next day, had difficulty in swallowing, became cyanotic and died. Smear and culture from the lesion was positive for anthrax. Stock of hair in factory, on examination, showed the presence of anthrax spores.

CASE 4—A fireman in a gas plant, died at the age of 46 years from anthrax, which he contracted from a new brush, after he had cut the skin of his neck at the angle of his left jaw. Two days before his death, when admitted to the hospital, he was suffering from edema of his neck, and cyanosis. He died within two hours after admission. Both the lesion and the brush used were found to contain anthrax bacilli, on laboratory examination.

CASE 5—A laborer in a Paris-green factory, died after three days illness from anthrax, at the age of 45 years. A pimple on the chin was cut by him while shaving. Soon after the neck became swollen, the patient became semi-conscious, cold and clammy, with temperature 99, pulse 100, and respiration 32. First diagnosis made was that of septicaemia, but final diagnosis of anthrax was made. The patient died the same day he entered the hospital. Laboratory examination of the lesion was not made, but for the brush it was negative. No local or serum treatment was administered.

CASE 6—A general worker in a naval hospital, 18 years of age, abraded skin of left side of his forehead while using a hair brush. Four days thereafter, the left side of his forehead and face began to swell; the next day, the swelling still increased, and there was tenderness on pressure in the neck, and the cervical glands were palpable. Two days later the lesion showed typical vesicles and an eschar about 3 by 4 cm. around oozing serum. Temperature 99.3. Anti-anthrax serum injected intramuscularly, and subcutaneously around lesion. Smear from lesion and examination of hair brush positive for anthrax. The patient recovered.

CASE 7—A farmer, 47 years of age, who did not deal in hides, and who never noticed any disease among the two horses and one mule which he owned, stated that his wife had purchased a new shaving brush for him from a 5 and 10c. store. He shaved three times with this brush; after the last shave his wife noticed a small pimple on the right side of his face. The following day, the patient complained

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of aching in all his joints and such weakness that he had to go to bed. Swelling on the right side of the face, and beneath the angle of the jaw became prominent. Another papule appeared on the other side of the face, similar to the primary lesion. These became larger, in areola, the centre became necrotic and a scab formed. The pre-auricular and cervical glands became large and very painful. He had chilly sensations, some headache and anorexia, but no nausea nor vomiting. His family physician suggested a diagnosis of glanders, but advised him to enter the hospital. At the hospital a smear and culture were found positive for anthrax, and the lesions on the face consisted of a red area on each side of his face, slightly above and medial to angle of mandible, a depressed area in centre with a black eschar about 1.5 cm. in diameter; immediately surrounding the latter was a single row of pinhead vesicles and pustules giving the appearance of minute pearls. The area about showed an areola about 5 cm. The entire tissues about the lower portion of the face and cervical regions were swollen and edematous. The submaxillary glands were about three cm. in diameter and the cervical glands were about seven cm. in diameter both sides. The left supra-clavicular glands were palpable. These glands were not very painful nor tender. Border of spleen was distinctly palpable. The average daily temperature was as follows: 1st day, 105; 2d day, 104; 3d day, 100; 4th day, 100; 5th day, 99.5; 6th day, 99.5; 7th day, 99; 8th day, normal; pulse and respiration corresponding. The treatment consisted as follows: Under local anaesthesia, the two pustules were excised and the skin wounds thus formed were sutured without drainage with interrupted silk worm gut. Operation was performed on evening of day of admission, without waiting for report of culture taken from the pustules. Sutures were removed one week thereafter. Intravenous injection of anti-anthrax serum was administered as follows: Day of admission, 9 P. M.: 30 c. c.; 12 M.: 30 c. c.; then 30 c.c., every four hours. Chills followed by profuse sweating after each injection of serum occurred. The patient was discharged, cured, two weeks after admission to hospital. The brush with which the patient shaved, though sent to the hospital, disappeared in some unknown way, and could not be obtained

CASE 8—A seaman, 34 years of age, died of anthrax, after four days stay in the hospital. Two days previous to admission he cut his right cheek while shaving. His cheek then became considerably swollen. At the same time he had a feeling of pressure in the head, with chills and sweating. He also was dizzy. His maximum temperature was 105.5, on 1st day of hospital stay; 104, on 2d day; 103, on 3d day, and 102, on 4th day. The presence of a carious right, inferior, second molar tooth, and pain in right side of face and neck led to a provisional diagnosis of cellulitis of right cheek, on the 1st day. A blood culture and smear, taken the next day, revealed the presence of anthrax bacilli. It was then noticed that the small pustule in the right molar region and face was covered with a black crust, and surrounded by an area of red induration, tender to touch; the glands of the neck and axilla were swollen. The entire left chin was also swollen. Diagnosis of anthrax was then made, and treatment by incision, drainage and anti-anthrax serum was given. The brush was not obtainable.

CASE 9—A male cook on a steamer, 59 years of age, died from anthrax after four days' illness following his shaving with a new brush. The first day of his illness he entered the hospital and was removed to another hospital the following day, after the smears from the patient's lesion were found to be positive for anthrax. This patient was dyspnoeic, and had a typical malignant pustule below the angle of right jaw. The entire lower half of the face and the anterior part of the thorax, to the level of the fourth rib, was edematous. Along the fatty folds in the neck, and on the right parasternal line, in the first interspace, where the pustule touched the chest, when the head was flexed, rings of vesicles extended. The day before he died, the

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patient's temperature was 101, with pulse 136, and respiration 24. On this day, treatment by excision and anti-anthrax serum was given. The brush was burned by brother of deceased, on the day the patient took sick, and it was not known where this brush was purchased or manufactured.

CASE 10—A female brush maker, twenty-one years of age, who had been employed at this trade for six years, but never took any precautions in handling raw China horse hair, one morning, noticed a pimple on the front of her neck. She painted it with iodine, but the next day it looked the same, and she went to work. When she returned at night she had chills and fever; the next day she stayed home from work; and the following day she still felt feverish, and the neck swelled rapidly during the day, so that by night both jaws were swollen, and the neck was red and sore. She saw a physician that evening, and secured a "black salve." On the 5th day she went to the hospital. The neck lesion was now 2 inches in diameter, raised, red and tender, and the face was edematous. The lesion, lying in the sternal notch, had a centre which was greyish, covered with a silvery scab, from the edges of which exuded a thin, white serum. About the central filled crater, was a circle of piled up, indurated tissue, of bright red color. The surface was uneven, highly elevated, and covered with small white vesicles. The edge of the lesion showed an abrupt transition to normal white skin. A large area of abundant edema, however, surrounded the lesion, the involved area being the entire lower half of the face, and this edema extended down the neck and the thorax, anteriorly to the level of the 3d rib.

CASE 11—A loader and unloader of hides and skin, twenty-five years of age, who carried raw hides on his back, the hides coming in contact with his neck, and taking no precautions, noticed on a Monday morning that the right side of his neck felt stiff and had begun to swell. Simultaneously with the swelling, the patient noticed a pimple in the centre of the swelling. On Wednesday, the patient had chills, and slight pains in the back and limbs. Two days later, he entered the hospital, having a temperature of 104, pulse 108, respiration 24; his right side of neck was swollen and edematous. Below and anterior to the angle of jaw, on right side of neck, was an angry dark red postule, 1¼ inches in diameter surrounded with an area of indurated tissue, very slightly tender. Pustule was excised, swabbed with phenol and alcohol, and anti-anthrax serum was administered. Patient's temperature became normal in one week. Recovery followed. Direct smear from the lesion showed definite short chains of B. anthracis. Blood culture, forty-eight hours, negative.

CASE 12—A patrolman for a railroad, 45 years of age, died of anthrax, after two days' illness. Two days previous to entering the hospital, he had cut his chin with his razor, and then had used a new brush to lather. The following day his chin began to swell, and, the day after, he was taken down with chills, fever, and sweats, when he was removed to the hospital. He was only four hours in the hospital when he died. At the hospital, the diagnosis of meningitis was first made by the staff physician, on account of severe, agonizing pains of his head and of back of neck, and by reason of the nausea and vomiting, coupled with the temperature of 102 degrees, pulse 104, and respiration 26. A lumbar puncture was made, and 12 c.c. of fluid removed. This fluid was cloudy and contained bacilli resembling B. anthracis. A smear from the black, crusted pustule on chin showed many different organisms and short chains of an encapsulated, square-ended bacillus, resembling B. anthracis. Culture from the brush which was used by the patient was observed, and was found positive for anthrax.

CASE 13—A loader of hides and skins, twenty-nine years of age, noticed, on a Sunday, a pimple on the right side of his chin. The following day he noticed a swelling, and applied a salve. The third day he awoke with pains in neck, anorexia, and weakness. On this day he entered the hospital, and there was found a lesion, located on right side of neck, under chin, which measured 1 inch in diameter; there was a soft

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edema, extending over left side of neck and downward to region of trachea, also slightly over inferior-anterior margin of inferior maxilla, involving, to a slight extent, the cellular tissues of the lower part of the face. The lesion, although small, had the three zones so typical of anthrax—1st, the central depressed black eschar, which was very firm and tenacious; 2nd, the surrounding elevated border, which was not as typical as usual; 3rd, the surrounding red areola. The patient's temperature on admission to hospital was 100, pulse 118, and respiration 26. Smear and culture from the lesion were positive for anthrax. The treatment consisted, on the first day, of two injections of anti-anthrax serum, one into buttocks, 28 c.c., and one around lesion, 6 c.c. The second day, 45 c.c. were injected. The temperature rose 2.5 degrees after serum administration. The patient recovered.

Case 14—A longshoreman, hide handler, forty-three years of age, died of anthrax, after an illness of eight days' duration. Five days previous to his first visit to his private physician he felt ill, and had a pimple on the right side of his neck, at the angle of the jaw. His neck began to swell, and a pustule formed. This lesion consisted of a centre crater, about 1.5 inches in diameter, surrounding which there were minute vesicles. Around the vesicles there was a red zone, the tissues around which were edematous. The anterior cervical glands were enlarged. The physician immediately excised the pustule, cauterized it with iodine and silver nitrate, and dressed it, daily, with 5 per cent. solution of phenol. The patient's edema increased, causing pressure symptoms and cyanosis. The patient died.

Case 15—A truck driver, hide handler, thirty-two years of age, three days previous to admission to hospital, loaded hides from a pier, and suffered an abrasion on the left side of his neck. On the site of this abrasion a pimple developed, by evening, which was not treated. The next morning the left side of the neck began to swell, and the pimple became larger. The process steadily increased in severity, up to the time he entered the hospital, when the entire neck, both left and right side, and the face, were greatly swollen. There was difficulty of breathing. The temperature was 103; pulse, 148; and respiration, 26. There were two small pustules about one inch below the lobe of the left ear which were dark in color, and had a black base. There was intense induration of the whole left side of the neck, extending anteriorly and posteriorly to the right side, and downward over the sternum and chest. There were marked edema of the left half of larynx and arytenoids, a moderate edema of the ventricular bands; the cords could not be seen; there was no cyanosis; edema of tissues of left side of lower pharynx, epiglottis and larynx was present. Larynx was pushed to the right; the epiglottis was folded upon itself, due to the edema. At this examination, four incisions were made in the following locations: pharynx, beneath the left tonsil; epiglottis, left arytenoid fold, and pyriform fossa. The next day breathing was quiet, and there was do dyspnoea. The laboratory examination of smear from pustule was positive for anthrax. Anti-anthrax serum, 40 c.c., was given every four hours. The patient recovered.

Case 16—A longshoreman, forty-eight years of age, died of anthrax. On Sunday morning he was shaved at a barber shop. On Tuesday, noticed a pimple on right side of face. On Wednesday, entered the hospital having no pain nor difficulty in swallowing, but his face was considerably swollen. There was a small vesicle ½ inch in diameter, below the right jaw, about half-way from symphysis to angle. The centre was covered with a grayish-black scab. There was a marked soft edema of the right side of face and neck; over the manubrium of the sternum there was a large, edematous swelling. No tenderness. Temperature was 102; pulse, 134; respiration, 26. The smear and culture from the lesion were positive for anthrax. Anti-anthrax serum, 40 c.c., was given every four hours, but the patient died the following day, Thursday.

Case 17—A checker of hides in a warehouse, sixty-eight years of age. Had been

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employed for the past three years at receiving and delivering these hides. The patient stated that, in consequence of the handling of the hides by the workers, considerable dust was generated, and that he was exposed to the dust while performing his duties. Two fellow-workers had, recently, been affected with anthrax. The pustule was situated on the left side of the neck below the chin. At this point, while shaving himself, he had cut himself with his razor. The brush used at this time was one that he had purchased one year before. The day after he had cut himself, he sent for his family physician, who took a smear and culture, which, when examined at the laboratory, were found positive for anthrax. On this day his neck was very much swollen; the pustule was incised and anti-anthrax serum was administered. The neck continued to swell for three days, the height of the swelling being on the last of these days. The serum treatment was given for four consecutive days. On the fourth day of the administration of the serum the swelling subsided. The patient had chills and fever until after the administration of the last dose of the serum. The patient made a good recovery.

CASE 18—A female inmate of an institution, sixteen years of age, while doing dining-room work, used a table brush for allaying itching of her wrist. This brush was a hair brush and was used for cleaning the top of the table after meals. The day after having used the brush on her skin, the patient noticed a pimple on the right wrist, which pained her. This forearm became edematous, the swelling extending down to the finger tips, and up as far as the elbow. Surrounding the pimple was a red areola. A black eschar developed in the centre of the lesion which formed the pustule. Treatment was immediately instituted, and consisted of the application of phenol and incision. Three days following the formation of the pimple the patient gave birth to a baby boy. Smear and culture of the lesion were found positive for anthrax. Mother's post-partum condition was good; she recovered. The brush was burnt by the superintendent of the institution immediately after the patient had become ill, and, therefore, was unobtainable for analysis.

CASE 19—A brush maker, sixty-three years of age, while shaving, noticed a slightly raised area of skin on the left side of his neck, near angle of jaw. The brush used was an old one, which had been in use for the past two years. The patient stated that he did not cut himself with the razor. However, the slightly raised area increased daily in size, until the fifth day after he had first observed it. On this day, while riding in a train, he suffered from a chill, and on the sixth day he called upon his physician, who found that the patient had a temperature of 102 degrees, and had a lesion on his neck, which consisted of a central black eschar, surrounded by a raised edge with slightly red areola. The lesion, which was ¼ inch in diameter, increased the next day to ½ inch in diameter, and, three days thereafter, was 1½ inches in diameter. The treatment consisted in the local application of chlorozene, injection of the edges of the lesion with tincture of iodine, application of yeast and of iodoform ointment. Smear and culture from lesion showed the presence of anthrax. Specimens of hair used in the manufacturing of brushes in the factory, where the patient was employed, were examined at the Research Laboratory, and showed the presence of anthrax spores.

CASE 20—A house-shorer, thirty-one years of age, purchased a shaving brush at a drug store, and began shaving himself for the first time, previous to the time having always had a barber to shave him. The day following the third time he had shaved himself, he noticed a little white pimple and a swelling on his neck. The following day, although his face felt sore and was swollen, he went to work, but in the evening he had to be brought home by two fellow-workers. That evening his wife placed poultices on his face, and called the family physician, who treated him by a salve for two days, then referred him to a hospital, where he was operated upon. The diagnosis made by this hospital staff was abscess of the right mandible, but the culture from the abscess showed the presence of organisms resembling anthrax bacilli. The same day

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the patient was sent from this hospital to another, where a smear was taken from the lesion and showed bacilli morphologically similar to anthrax bacilli. The temperature of the patient, at this hospital, ranged as follows: first day, 101.5; second day, 104; third day, 102; fourth day, 100.5; fifth day, 98.6. Anti-anthrax serum was administered every four hours. The shaving brush used by the patient was examined at the laboratory, but found negative for anthrax. Ten brushes were collected from the drug store where the patient had purchased his brush, and six of these brushes, which were similar to the one used by the patient, showed, on laboratory examination, the presence of anthrax spores.

CASE 21—A brush maker, twenty-seven years of age, who has been working at this trade for two years, noticed a pimple on the right side of his neck, below jaw. This was observed on Sunday. He went to a druggist, who said it was a "blind boil," and gave him some antiphlogistine to apply. On Monday, he went to a doctor, who incised the lesion, and applied iodine. On Tuesday and Wednesday the edema spread extensively up to cheek, out to the left side of his neck, and down to his chest. No constitutional symptoms were present. The patient was in bed all the week from the onset of the symptoms. Lesion was not painful. He was admitted to the hospital Friday. Right jaw and neck presented a black eschar, 6 c.m. in diameter. In the centre of the eschar was an ulcer. The tissue was indurated and edematous around the eschar. There was an erythematous flush on his neck and chest. The tonsils showed congestion and slight edema. Culture and smears taken from the crust of eschar were negative. Patient stated that his work consisted in cleaning out the loose hair, after the brush was made. He had not shaved himself in the last few months. The treatment given was as follows: 30 c.c. anti-anthrax serum, in buttocks, twice on Saturday. On the same day, 8 c.c. serum was injected into the tissue which comprised the indurated area of the pustule. The needle was inserted at four different points, at the four sides of the pustule, and 2 c.c. serum injected. On Sunday, the next day, there was more inflammatory reaction in the neighborhood of the pustule than on the previous day. The indurated area had extended in some places ½ inch, and the entire area presented a more definite red color than on the previous day. There was no fluid oozing out of the central eschar, but there was a more definite blanched zone. The three zones were more definite; the margin of the eschar was deeply adherent to the neighboring tissue, and could be detached only with great difficulty. The lesion improved daily, indurated area diminishing in size, healthy, reactionary color setting in, eschar becoming more moist, and edema growing less. The patient recovered.

CASE 22—A driver, forty-five years of age, occupied in trucking hides and skins for the past sixteen years. One day, while handling hides at a pier, loading them into the trucks, and from the trucks into the freight cars, this man scratched a pimple on his face with his gloved hands. The following morning he noticed a lump on his face, and that afternoon went to a hospital, where a "young surgeon" pulled the scab off, and told him to come back. The next day he saw his family physician, who advised him to go to another hospital, where he was admitted two days later. At the hospital, the following condition was observed: There was a swelling on the left side of his face; a little above and in front of the angle of the jaw was a small eschar, about ¾ inch in diameter, blackish in color and very indurated; the scab was very adherent to the skin; the surrounding tissue was reddened, swollen, and indurated. The induration and the edematous border extended to the infraclavicular region, half-way between the clavicle and the nipple. He complained of inability to get his breath, and cough—the throat condition being the most irritating to the patient. An erythematous rash extended over the abdomen. On the day of admission to the hospital, the patient's temperature was 103. Thereafter, it ranged from 100 to 99. Smears showed a suspicious looking bacillus and staphylococci. Cultures were positive for anthrax. The

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treatment received at the hospital was as follows: Hot alum-acetate dressings placed over all involved parts for hyperemic effect; anti-anthrax serum, 40 c.c., intravenously; infiltration of arseno-benzol solution around eschar and into subcutaneous tissue. Three weeks later, excision at the site of the lesion was performed. The patient recovered.

CASE 23—A loader and unloader of hides and skins, 18 years of age, had been employed by a truckman for nine months. While loading hides from a pier to a truck, one of the hides slipped from the truck and brushed past the right side of his head. The next day he noticed a pimple and a swelling on the right side of his face. He consulted his physician, who referred him to a hospital, which he entered, three days thereafter. Here, the right side of his face showed a marked swelling and redness. In front of, and just above, the right ear was a raised, bleb-like area, about 2 cm. in diameter, having a crater-like black center. This area was surrounded by an area of firm, brawny swelling, extending downward over most of the right side of his face, and for about 5 cm. below; and behind, the right angle of mandible. This area was red, warm, and moderately tender. The right cervical glands were bean-sized, and tender. There was puffiness beneath the right eye. The temperature of the patient was 101 on day of admission, but became normal the following day. Treatment: Two injections of 40 c.c. anti-anthrax serum were given, and an operation was performed on the day of admission. The operation consisted in the removal, by cautery, of an area about 2 inches in diameter from the pustule down to the temporal fascia, which was split in two directions and undermined. The skin was also extensively undermined, gauze packing being used.

Laboratory Findings: "Macroscopic examination of tissue removed—Wedge-shaped mass of tissue from the face, covered with skin, shows a blackish, raised eschar. Microscopic Examination—The epidermis is superficially eroded in places, with the formation of small vesicles. A marked feature is the congestion of the blood vessels and hemorrhage into the surrounding tissues. There are extensive edema of the skin and widespread inflammatory infiltration of the subcutaneous strata, including the fat and the muscle. The cellular invasion consists, largely, of round-cells and endothelial leucocytes, with relatively few polyneuclears. A few bacilli occur in Gram-Weigert sections, morphologically resembling B. anthracis."

The patient was discharged from the hospital one week after admission, but was re-admitted the following day on account of severe bleeding from a branch of the temporal artery. Hemorrhage was stopped, and the patient made an uneventful recovery.

CASE 24—A street cleaner, thirty-two years of age, purchased a shaving brush from a street stand vendor. The following day, when he shaved, using this new brush, he noticed a small abrasion on his face. Sunday, the next day, a swelling appeared at this site. This swelling continued Monday and Tuesday. He walked into the hospital on Wednesday, complaining of headaches, chills, fever, constipation, and a slight cough. The lesion consisted of a black eschar, about the size of a half dollar. This eschar was depressed, and surrounded by a red areola. The tissues surrounding this areola were edematous. The lesion was situated at the angle of the left jaw; the swelling extended beyond the region of the parotid gland, above, and over the check down to the right side of the neck, both sides of the neck being swollen. The temperature record was as follows: Wednesday, 100; Thursday, 99; Friday, 98; and succeeding days, normal. He received the following treatment: Anti-anthrax serum injected around the lesion and intravenously. No incision, excision, nor surgical operation was performed. There was no record of laboratory examination from the lesion. The shaving brush which was used by the patient was obtained and showed the presence of anthrax spores.

CASE 25—A worker in a warehouse for hides and skins, forty-eight years of age, was employed, for the past four years, in the loading, unloading, weighing, counting and sorting of hides and skins. On Friday, the weather being cold, there was a bonfire

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started, and the worker, being near, a spark struck his neck, causing a small blister to form. This occurred at the dock, near the terminal freight station. The worker had been sent by his employer to unload dry hides from the truck into the freight car. On Friday night the worker shaved himself, using a brush which was an old one. In doing so, he cut the blister that resulted from the burn, the fluid coming out. He went to work on Saturday, Monday, Tuesday, Wednesday, and on half of Thursday. On Monday, some of the workmen noticed a pimple forming on the right side of his neck. On Tuesday, this pimple became larger and fluid began to ooze from it. On Wednesday the fluid still kept oozing from it, and swelling in the region of the lesion began. Up to this time there was no pain nor difficulty in swallowing. On Wednesday, overnight, the lesion became greatly swollen and, on Thursday, there was difficulty in swallowing solid food. This day he went to his physician, who said it was a boil and opened it. The following day, Friday, the doctor thought it was anthrax and sent him to a hospital, where he received anti-anthrax serum. That night he had headache, chills, and sweats. On Saturday he was removed to another hospital. Here the patient was found perfectly rational, and answered questions, but his voice was hoarse. He complained of no pain in his neck, but did complain of difficulty and of pain in swallowing. His throat was congested. No exudate was present on the tonsils. On right side of his neck, about 2 inches below the angle of the jaw, there was a large, angry-looking lesion, elevated about the surrounding tissue, and measuring 1½ by ¾ inches, rather elongated, and composed of a central blackish-gray area with an elevated, red, vesicular-like border, which ran completely around the lesion. Puncture of this caused serous exudate to pour out. Around this was a red, indurated, brawny swelling, very firm, almost erysipeloid. Below, and posterior to this, there was a soft edema of subcutaneous tissue, which extended below to the fourth rib, on the right side. Temperature, pulse, and respiration were as follows: Saturday, temperature, 102.8; pulse, 90; respiration, 28. Sunday, temperature, 99.2; pulse, 82; respiration, 26. All three became normal by Thursday following. Bacilli resembling anthrax bacilli were found by laboratory examination. Treatment consisted of injection around the lesion, intramuscularly and intravenously, of anti-anthrax serum (Eichhorn). The patient recovered.

Case 26—A milliner, thirty-six years of age, only recently had handled hores hair cloths and horse hair braid in making hats. On Sunday, the patient noticed a pea-sized, red papule on the right side of her chin. She picked at this, making it bleed. A black scab appeared. Tuesday, local soreness appeared. Wednesday, she consulted a physician, who advised hospital treatment. Thursday, her face and neck became swollen, and the black eschar became larger. Friday, the patient presented herself at the hospital. Here, there was observed an area of induration and swelling on her chin and on her right cheek, about 3-4 inches in diameter; in continuation of this area there was an elevated black eschar, about one-half inch in diameter, surrounded by a number of small, pinhead-sized vesicles. The skin around these vesicles was of rose-red color. The glands in the neck were swollen on both sides, especially on the right side. Culture from the vesicle was positive for anthrax bacilli. During the first week of her stay in the hospital the patient's temperature ranged about 100, becoming normal thereafter. Treatment consisted in the local infiltration of 15 c.c. anti-anthrax serum; and in the intravenous injection of 40 c.c. anti-anthrax serum, every four hours. The patient recovered.

Case 27—A public school boy, 15 years of age, was instructed in brush making in the school shop, this being part of the vocational course. The work of making dust brushes consisted in wiring horse hair to perforated wooden backs, and in screwing these backs to wooden tops. This boy was attended by a private physician at his home. Following the day this boy last attended school on which day he handled the horse hair, he felt ill. When seen by the writer, four days after his physician began treating him, the patient showed a typical anthrax lesion on his chin. This

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consisted of a central black aschar 1½ inches in diameter, surrounded by a vesicular ring; around this ring there was a red areola; around this areola the tissues were edematous. The cervical glands were enlarged. The temperature was 99.4. The treatment consisted in the local application to the lesion of Dakin's solution. The patient recovered. Anthrax spores were present in the horse hair obtained from the dealer who furnished the hair to the contractor, who delivered the hair to the schools (brush shop classes).

CASE 28—A fireman, aged 24 years, from out of town, came to the city. The day before he left his home town, he had a pimple on his left cheek. He cut this pimple when he shaved himself. The brush for lathering had been used ten times previously. Four days later, as his custom was to shave himself every four days, he had a barber in the city shave him. Two days after the barber had shaved him, his face became swollen, and he went to a physician, who immediately sent him to a hospital, where the smear and culture from the lesion were found positive for anthrax. He was transferred to another hospital, where he was found in the following condition: The temperature of the patient was 100. On the left side of his face there was a black eschar, about 1 inch in diameter, surrounded by an erythema, and a ring of vesicles, and the latter were surrounded by a slightly red areola. There was edema of the left side of the face, and of the left eye. This edema extended to the neck. Anti-anthrax serum was administered locally around the lesion and intravenously. The patient recovered.

CASE 29—A horse dealer, age 37 years, stated that his wife purchased for him a khaki kit which contained a shaving brush. This brush was used by him only two or three times, previous to his beginning to shave himself daily. After six consecutive days of lathering with this brush, this man discovered a furuncle on his cheek. The patient was admitted to the hospital, four days later. He stated that on the day he discovered the furuncle, he picked it, and applied a mixture of camphor, glycerine, and iron to the wound. The following day, the wound became dark and crusted, and he applied hot poultices. It then developed vesicles about the outisde margin. There was no dyspnoea, nor cyanosis. Eyes, mouth, throat, lungs, heart, arteries, pulse, abdomen, extremities, reflexes, knee jerks, achilles were all normal. No clonus. No Babinski. Local condition was as follows: There was a dark crusted ulcer on the left cheek, surrounding which was an edema, extending up and down the left side of the face. The left upper and lower lids were edematous. There were numerous vesicles about the edge of the ulcer. Smear and surface culture were positive for anthrax. The range of temperature, pulse and respiration were as follows:

Day	1	2	3	4	5	6
Temperature	101.4	100	99	99.4	98.6	98.6
Pulse	120	88	104	92	92	104
Respiration	20	20	20	18	20	20

Treatment: Anti-anthrax serum was administered as follows: 40 c.c., intravenously, every four hours; 10 c.c., subcutaneously, every eight hours. No operation was performed. Serum was discontinued after the sixth day. After the first and second injection of serum, the patient had chills and fever. No further reaction followed. Patient recovered. Investigation showed no disease among the animals that the patient had handled. The brush used by the patient was traced to a manufacturer whose stock had previously been found to contain anthrax spores.

CASE 30—A shoemaker, 43 years of age, died from anthrax five hours after his admission to the hospital. At the time of his admission he was in a comatose condition, with temperature 97, pulse 100, respiration Cheyne-Stoke and irregular. Examination showed an angry red pustule, surrounded by several vesicles, about one inch from

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the mouth on the left cheek; a marked edema of both cheeks and left side of neck, and hard submaxillary and cervical glands. Laboratory examinations of blood, smear and culture from pustule were positive for anthrax. This patient had noticed a pimple on his cheek, four days after having used a new shaving brush for the first time. Three days after he noticed this pimple he sought medical advise, but a diagnosis of anthrax was not made until another three days had elapsed; then he was brought to the hospital.

CASE 31—A manufacturer of celluloid goods, age 44 years, was admitted to the hospital suffering from a lesion which began with a small furuncle on the dorsum of the left hand, nine days previously. On the seventh day, from the appearance of the furuncle, the latter opened and exuded a small amount of serum. The patient said that he had rubbed the ulcer with a dirty woolen cap. On admission to the hospital, the lesion consisted of a red area on the dorsum of his left hand, ½ inch in diameter, with a central dark crust, surrounded by fine vesicles. The temperature was 102; pulse, 80; respiration, 24. The temperature gradually subsided until, on the ninth day after admission, it was normal. Marked edema, extending upwards to within two inches of the elbow, and downwards to the fingers, and slightly enlarged, not tender, axillary glands were present. The culture and smear were positive for anthrax, on admission; becoming negative one week later. The treatment consisted of anti-anthrax serum, 40 c.c. intravenously, and 10 c.c., locally, around the lesion. No history could be obtained of exposure to any article made of hair, or any infected material save that of the cap, which being woolen may possibly have been anthrax-infected. As the cap had been destroyed, it could not be examined bacteriologically. The patient recovered.

CASE 32—A stock clerk in a celluloid shop, where no articles made from hair were made, became affected by anthrax after shaving himself with a new brush, which he had recently purchased. Up to the time that he was admitted to the hospital, four days after he had noticed a pimple, and after he had sought medical advice, no diagnosis had been made. On admission, a lesion, the size of a quarter of a dollar, showing a central eschar, on his right cheek, accompanied by enlargement of the nodes of the neck and edema, was present. The temperature was 103, and gradually declined each day until, the ninth day after admission, it became normal. Smear from the lesion was positive for anthrax. The shaving brush, which had no mark of identification upon it, likewise, upon bacteriological examination, showed the presence of anthrax spores. The patient was treated by anti-anthrax serum, intravenously and locally. He recovered.

CASE 32—A schoolboy, age 14 years, who said that he had not come into contact with hair nor hides, nor did he shave, noticed what he took to be a mosquito bite, on his left cheek, five days previous to his admission to the hospital. His face started to swell. On consultation, his physician treated the condition as erysipelas. At the hospital, examination showed, on the left cheek, just below and behind the eye, an ulcerated area, about an inch in diameter, surrounded by a ring of fused vesicles. This whole side of the face was extremely edematous, the edema tightly closing the eye, and extending upward on the side of the forehead, and downward to the neck. The lymph nodes in the angle of the jaw were very large and hard, but not tender. Direct smear and culture from the lesion were positive for anthrax. The maximum temperature was 104—this was on the day of admission. Treatment consisted in the administration of anti-anthrax serum, intravenously and by local infiltration. A rash developed immediately after the serum treatment. The patient recovered.

CASE 34—A longshoreman, age 46 years, contracted anthrax by the use of a new shaving brush, which was purchased by his wife at a department store. This brush bore no trade or other mark but, on comparing it with others at the department store,

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it was found to be from the same lot. One of the brushes from the store was forwarded to the laboratory, and showed the presence of anthrax spores. It was two weeks after the brush was purchased, that the patient, while shaving himself, cut off the top of a pimple. He then lathered his face, using the new brush, which previously he had used six times. The next day, Sunday, the patient noticed a swelling, and a small red elevation on the right side of his face. On Monday, the swelling increased, and the patient sought advice from a druggist. On this day, there was slight pain, and a slight crust developed. On Tuesday, the swelling increasing, a physician was summoned; on Wednesday, the swelling involved the eye and, after medical consultation, the patient was referred and admitted to the hospital, having a large swelling on the right side of the face and some pain in the region of the swelling. The lesion was typical in its character, and had a cherry red, depressed, centrally firm, tenacious eschar, which measured ½ by 1 inch; a small indefinite blanched zone, 1/16 inch across; a red areola, which measured about ⅛ inch; an indurated zone around the areola, which measured about 2⅛ inches; a soft edema around this, extending 3 inches beyond the indurated zone, on the inner side, and 2 inches on the outer side; a slight edema of right eyelids. Eichhorn's serum was administered, intravenously, and around the lesion. The serum was also given intramuscularly and subcutaneously in right buttocks. The administration of the serum was followed by an intense rigor, slight cyanosis and weakness of pulse; followed by profuse perspiration; the entire reaction lasting one hour. Culture and smears from the lesion were positive for anthrax. Blood culture was negative. The urine contained a faint trace of albumin, with hyaline casts. The maximum temperature was 100, on the day of admission, becoming normal five days thereafter. The patient recovered.

Analyses of Cases

AGES—The youngest patient was 14 years of age, the oldest was 79 years. The following table gives the number of cases and deaths in each age group:

Age Group	No. of Cases	No. of Deaths
10-19	6	0
20-29	6	1
30-39	6	1
40-49	11	6
50-59	2	2
60-69	2	0
69-79	1	1
Totals, All Ages	34	11

SEX—There were two females and thirty-two males affected.

TERMINATION—Twenty-three recovered and eleven died (32%).

Fatal cases usually terminated within eight days.

PART OF BODY AFFECTED—The face was affected in sixteen cases; the neck, in twelve cases; both face and neck, in four; the wrist, in one; and the hand, in one case.

BACTERIOLOGICAL FINDINGS—These were positive for anthrax in thirty-one cases, negative in two cases, and not determined in one case.

CLINICAL FINDINGS—*Onset.* The onset was ushered in by local swelling, following the appearance of a papule in 21 cases, one day after exposure to infection; in two cases, two days after exposure; in two cases, four days after exposure; in one case, five; in one case, six; and in seven cases this was not determined.

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Lesion. The lesion was typical; that is, consisted of a central black eschar, surrounded by a vesicular ring, around which was a red areola, and around this areola the tissues were edematous, in twenty-four cases. In the remaining cases, the lesions were not so typical. The diameter of the eschar varied in size from ½ to 2½ inches. The neighboring tissues were usually edematous, and the neighboring glands enlarged. In two cases the edema extended from the face and neck down to the third and fourth ribs; and in one case, from the face to the sternum.

Temperature. The temperature, as a rule, was not very high, and, in cases that recovered, it gradually subsided, becoming normal by the tenth day. The temperatures recorded were: 105, in two cases; 104, in two cases; 103, in three cases; and 102 and below, in the remaining cases.

Chills. Occurred in ten cases.

Aches and weakness. Occurred in seven cases.

Nausea and vomiting. Occurred in one case.

Dysphagia. Occurred in two cases.

Cough. Occurred in two cases.

Erythematous rash. Occurred in two cases.

Laryngeal edema. Occurred in one case.

Dyspnea. Occurred in three cases.

Cyanosis. Occurred in four cases.

MISTAKEN DIAGNOSIS. Eight cases were mistaken for erysipelas, septicemia, glanders, carious teeth, cellulitis, meningitis, abscess, and boil, respectively.

FATAL CASES. Usually terminated before the eighth day. One case died in 2 days; two, in 3 days; three, in 4 days; two, in 5 days; two, in 6 days; and one, in 8 days.

TREATMENT. The following table summarizes this:

Treatment	No. of Cases	Results	
		Recovery	Death
Anti-anthrax serum, only	14	12	2
Anti-anthrax serum and incision	5	4	1
Anti-anthrax serum and excision	4	3	1
Anti-anthrax serum and chemical cauterization	2	..	2
Chemical cauterization and incision	2	1	1
Anti-anthrax serum, excision, and chemical application	1	1	..
Chemical application	1	1	..
Chemical application and yeast	1	1	..
No treatment recorded	4	..	4

Comment. As 14 cases recovered without operation, and 9 recovered with operation, it would be logical, from the observed cases, to judge that it was best not to operate. Again, out of the 14 that received only anti-anthrax serum, two only died. Out of the 12 that received serum aided by other treatment, 4 died. The method which seems most successful is that of administering anti-anthrax serum, 10 c.c., by local infiltration, every eight hours; and 40 c.c., intravenously, every four hours.

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OCCUPATIONAL CAUSES—	
Shaving—Using new shaving brushes (anthrax-infected)	17
Manufacturing Brushes—Handling anthrax-infected hair	5
Millinery—Handling infected hair cloth and hair braid	1
House Cleaning—Handling infected dust (hair) brush	1
Total from contact with hair	24
Trucking—Including unloading, sorting, loading, counting hides and skins	8
Unknown	2
Total	34

Preventive Measures

Adequate disinfection of hides and skins at place of origin, shipment, or terminal, is necessary in order to prevent future occurrence of anthrax among such handlers. This disinfection must be done under expert supervision, and before further transportation or handling is allowed.

Sterilization of hair must likewise be done under proper supervision, and before manipulation of the hair is permitted. Section 230 of the Sanitary Code of the Department of Health requires proper sterilization of all hair used in the manufacture of brushes and hair cloth.

Sec. 230. *The manufacture and sale of hair brushes and hair cloth.*—No person shall use in the manufacture of brushes or cloth, any animal hair which has not been sterilized by a process prescribed or approved by the Board of Health, nor shall any person bring into, or offer for sale, sell, or deliver in the City of New York, any brush or cloth containing animal hair unless the same shall have been so sterilized.

It shall be the duty of the manufacturer of shaving brushes, tooth brushes, hair brushes, nail brushes, or other toilet brushes intended for human use, to cause his name or trade mark, the place of manufacture, and the word STERILIZED to be permanently, clearly and legibly painted or branded upon every such brush before offering for sale, selling, or delivering the same in the City of New York, Provided, however, the word STERILIZED shall not be painted or branded upon any such brush unless the animal hair used in the manufacture thereof shall have been sterilized by a process prescribed or approved by the Board of Health.

No person shall sell, offer for sale, or deliver, or have in his possession with intent to sell, offer for sale, or deliver in the City of New York, any shaving brush, tooth brush, hair brush, nail brush, or other toilet brush intended for human use, containing animal hair, unless the name or trade mark of the manufacturer, place of manufacture, and the word STERILIZED is permanently, clearly and legibly painted or branded thereon.

The provisions of this Section shall take effect the 1st day of July, 1920, but shall not apply to brushes in stock on the 16th day of June, 1920, in the hands of dealers which have not been labelled or branded, as hereinbefore required.

Special Regulations.

The following processes for the sterilization of hair to be used in the manufacture of brushes or cloth and relating to the provisions of Section 230 of the Sanitary Code were approved by the Board of Health:

1. Boiling the hair in water maintained at a temperature of 212° F. for a period of at least three (3) hours.
2. The placing of the hair in an autoclave in which a ten-inch vacuum is produced. Live steam to be then turned on and kept at fifteen (15) pounds pressure for a period of three (3) hours.

SUMMARY OF VITAL STATISTICS FOR THE MONTH OF OCTOBER, 1920.

The health of the city, during the month of October, was exceptionally good, as was that of the month of October, 1919, there having been a slight increase (33) in the number of deaths from all causes, but a decrease in the death rate of .13 of a point. A comparison between the mortality of the month just closed and that of the quinquennium, 1913-1917, inclusive, the month of October, 1918, being eliminated from the comparison by reason of the tremendous mortality occurring in that month, as a result of the pandemic of influenza which prevailed at that time—showed an extremely large decrease (amounting to 1,539) in the number of deaths from all causes. The causes of death that showed greatest decrease, with the number of deaths from specific causes, were as follows:

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Typhoid fever	36
Measles	4
Diphtheria	28
Poliomyelitis	18
Tuberculosis of the lungs	305
Other forms of tuberculosis	25
Organic heart diseases	129
Pneumonias and bronchitis	273
Diarrhoeal diseases	111
Cirrhosis of the liver	41
Bright's disease	148
Congenital debility and malformations	139
Violent deaths	71

The few causes that showed an increased mortality, were:

Scarlet fever	7
Whooping cough	2
Influenza	6
Cancer	17
Appendicitis	6
Diseases of Women	5

The most noteworthy decrease was that from pulmonary tuberculosis, in all probability due to a more plentiful supply of good nourishing food, and to the greater amount of abstention from the use of alcoholic liquors, as evidenced in a decrease of 41 deaths from cirrhosis of the liver. There were 322 fewer deaths reported under one year of age; at one year of age, the decreased mortality amounted to 90 deaths; from 2 to 4 years of age, inclusive, 66 deaths.

The greatest saving of life took place at the ages between 5 and 65 years, at which a decreased mortality of 928 deaths was noted; at 65 years of age and over the decrease amounted to 133 deaths. During the month, 2,476 males and 2,171 females died. The number of colored deaths is represented by 212, and the deaths of Chinese by 14. During the month, 152 non-residents of the City died within its limits.

The number of births reported during the month was 10,350—a decrease of 1,195, as compared with October, 1919.

The number of marriages reported during the month was 4,942—an increase of 328.

POPULATION, MARRIAGES, BIRTHS AND DEATHS, OCTOBER, 1920.

Boroughs.	Population U. S. Census April 15, 1910.	Estimated Population July 1, 1920.	Certificates Received and Tabulated.			Rate per 1,000 Based on Department Estimate.			Corrected Death Rate. **	Corr'td Death Rate Correspon'g Month 1919.
			Marriages	B'ths	* D'ths	Marriages.	B'ths.	D'ths.		
Manhattan	2,331,542	2,829,239	2,610	4,371	2,171	10.87	18.20	9.04	8.63	8.91
The Bronx.	430,980	669,233	546	1,130	484	9.61	19.90	8.52	8.38	8.37
Brooklyn..	1,634,351	2,117,908	1,486	3,858	1,505	8.27	21.46	8.37	8.97	9.02
Queens....	284,041	419,506	221	764	355	6.21	21.46	9.97	10.45	9.80
Richmond.	85,969	105,559	79	227	132	8.82	25.34	14.73	12.61	14.67
N. Y. City.	4,766,883	6,141,445	4,942	10350	4,647	9.48	19.86	8.92	.....	9.05

*Includes 152 deaths of non-residents of the city, which, if deducted, would give a death rate for the city of 8.62 per 1,000.

**Corrected by redistributing deaths according to borough of residence.

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REGISTERED MORTALITY FROM PRINCIPAL CAUSES.

OCTOBER, 1920.

	Manhattan.		The Bronx.		Brooklyn.		Queens.		Richmond.		City of New York.	
	Oct.		Oct.		Oct.		Oct.		Oct.		Oct.	
	1920	1919	1920	1919	1920	1919	1920	1919	1920	1919	1920	1919
Total, all causes	2073	2103	476	459	1613	1585	372	338	113	129	4647	4614
1. Typhoid Fever	8	5	2	1	6	9	...	1	...	1	16	17
3. Malarial Fever	....	1	...	...	....	....	...	...	...	...	....	1
4. Typhus Fever	....	....	...	...	....	....	...	...	...	...	....	....
5. Measles	1	3	1	1	3	....	...	...	...	2	5	6
6. Scarlet Fever	9	1	...	...	5	2	...	...	...	...	14	3
7. Whooping Cough	15	6	4	3	10	4	3	1	..	...	32	14
8. Diphtheria and Croup	16	12	2	2	17	24	8	14	1	1	44	53
9. Influenza	6	17	1	3	9	24	1	3	...	1	17	48
10. Cholera Nostras	....	....	...	...	....	....	...	...	...	...	....	....
11. Poliomyelitis	4	1	4	...	6	1	1	...	...	...	15	2
12. Other Epidemic Diseases	4	14	...	1	7	4	1	...	...	...	12	19
13. Tuberculosis Pulmonalis	198	245	36	44	129	145	36	30	6	10	405	474
14. Tuberculous Meningitis	18	17	6	7	12	14	1	2	...	...	37	40
15. Other forms of Tuberculosis	20	21	4	2	7	11	1	3	...	1	32	38
16. Cancer, Malignant Tumor	198	174	52	62	156	155	27	29	14	8	447	428
17. Simple Meningitis	11	7	4	1	3	10	4	3	1	...	23	21
Of which												
17a. Cerebro Spinal Meningitis	1	4	...	1	1	6	2	1	...	...	4	12
18. Apoplexy and Softening of the Brain	28	25	10	10	20	29	6	4	1	3	65	71
19. Organic Heart Diseases	325	309	93	83	297	250	48	60	19	10	782	712
20. Acute Bronchitis	14	10	1	...	15	8	1	1	...	...	31	19
21. Chronic Bronchitis	1	4	1	2	6	2	1	...	...	...	9	8
22. Pneumonia (exc. Broncho Pneumonia)	80	89	19	18	46	61	14	9	3	7	162	184
22a. Broncho Pneumonia	93	100	19	8	54	46	19	9	4	4	189	167
23. Other Respiratory Diseases	13	12	1	1	4	5	1	2	...	2	19	22
24. Diseases of the Stomach (Cancer excepted)	20	13	4	3	5	13	1	2	...	1	30	32
25. Diarrhoeal Diseases (under 5 years)	93	97	27	14	114	79	11	13	3	10	248	213
26. Appendicitis Typhlitis	24	23	2	4	22	16	8	2	2	1	58	46
27. Hernia, Intest'l Obstruction	24	23	8	7	13	16	6	4	1	...	52	50
28. Cirrhosis of Liver	12	17	5	3	6	9	...	2	1	1	24	32
29. Bright's Disease and Nephritis	132	111	38	37	144	152	28	33	10	21	352	354
30. Diseases of Women (not Cancer)	16	8	2	1	7	6	1	...	1	1	27	16
31. Puerperal Septicaemia	3	3	2	2	2	6	...	3	...	...	7	14
32. Other Puerperal Diseases	14	11	1	3	18	12	3	3	1	1	37	30
33. Congenital Debility and Malformations	105	129	22	30	93	102	26	27	9	7	255	295
34. Old Age	8	15	3	3	6	9	...	4	1	2	18	33
35. Violent Deaths	155	152	23	24	96	76	29	17	9	10	312	279
a. Sunstroke	....	....	...	...	....	....	...	...	...	...	....	....
b. Other Accidents	139	142	22	24	83	72	26	17	7	10	277	265
c. Homicide	16	10	1	...	13	4	3	...	2	...	35	14
36. Suicide	31	25	5	4	17	17	7	7	1	...	61	53
37. All other causes	367	397	74	75	258	266	79	50	25	24	803	812
38. Ill-defined causes	7	6	...	...	....	2	...	...	...	...	7	8

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REGISTERED MORTALITY FROM ALL CAUSES AND CERTAIN INFECTIOUS DISEASES, BY WARDS, OCTOBER, 1920.

BOROUGH OF MANHATTAN.

Wards.	Area in Acres.	Population U. S. Census 1910.	Number of Persons to the Acre.	Typhoid Fever.	Smallpox.	Measles.	Scarlet Fever.	Diphtheria and Croup.	Pulmonary Tuberculosis.	Lobar Pneumonia.	Broncho-Pneumonia.	Diarrhoeal Diseases.	All Causes.	Deaths of Children Under 5 Years.
1	154.0	9,750	63.0	..	..	..	..	..	4	..	2	..	24	2
2	81.0	933	11.5	..	..	..	..	..	..	..	..	..	1	1
3	95.0	1,915	20.2	..	..	..	..	..	1	..	..	..	4	..
4	83.0	21,336	257.1	..	..	..	..	..	2	1	1	1	16	6
5	168.0	5,666	33.7	..	..	..	..	..	..	..	..	..	3	1
6	86.0	19,670	228.7	..	..	..	..	1	7	2	1	1	24	4
7	198.0	102,101	515.6	1	..	1	1	1	8	6	4	7	64	24
8	183.0	33,182	181.4	..	..	..	..	..	5	1	3	1	36	3
9	322.0	64,909	201.6	..	..	..	..	1	8	4	..	2	64	12
10	110.0	66,439	604.0	..	..	..	..	..	1	3	1	2	31	8
11	196.0	136,548	696.7	..	..	..	1	..	3	1	6	3	50	16
12	6,154.0	806,648	131.1	2	..	..	2	4	67	22	35	29	788	174
13	107.0	64,651	604.3	2	..	..	..	..	1	..	2	..	25	4
14	96.0	38,321	399.3	..	..	..	..	1	4	3	1	8	36	14
15	198.0	30,584	154.5	..	..	..	..	..	2	..	..	2	22	6
16	349.0	55,926	160.2	..	..	..	..	..	9	3	4	3	63	4
17	331.0	172,334	520.6	1	..	..	4	1	15	5	5	11	129	38
18	450.0	62,821	139.6	..	..	..	..	..	7	2	2	5	64	11
19	1,481.0	292,950	197.7	1	..	..	1	1	19	9	11	9	247	47
20	444.0	73,308	165.1	1	..	..	..	2	8	5	7	4	75	13
21	411.0	62,345	151.7	..	..	..	..	..	10	3	1	3	70	11
22	1,529.0	209,154	136.8	..	..	..	..	4	17	10	7	6	237	45
Total....	13,226.0	2,331,491	176.3	8	..	1	9	16	198	80	93	97	2,073	444

BOROUGH OF BROOKLYN.

1	233.0	21,851	93.8	..	..	..	1	..	1	1	1	1	24	4
2	97.7	6,894	70.6	..	..	..	..	..	..	..	..	1	9	3
3	161.4	15,910	98.6	..	..	..	..	..	2	..	..	3	17	5
4	111.3	10,477	94.1	..	..	..	..	..	2	..	1	..	13	3
5	119.4	19,401	162.5	..	..	..	..	..	1	..	1	3	19	8
6	302.9	46,437	153.3	1	..	..	..	..	4	..	2	4	40	12
7	458.5	44,037	96.0	..	..	..	..	1	3	1	..	5	48	8
8	1,843.2	82,687	44.9	2	..	..	..	1	4	6	3	6	109	21
9	623.6	50,501	81.0	..	..	1	..	..	5	2	1	3	57	14
10	318.7	41,238	129.4	..	..	..	..	..	2	1	3	4	42	15
11	252.6	21,659	85.7	..	..	..	..	..	2	..	1	2	16	5
12	663.1	29,262	44.1	1	..	..	..	..	8	2	3	6	56	16
13	230.3	30,091	130.7	..	..	..	..	1	..	1	6	2	29	10
14	282.6	33,329	117.9	..	..	..	..	..	5	3	2	5	33	13
15	244.8	35,887	146.6	..	..	..	..	..	2	1	1	3	21	5
16	244.8	68,244	278.7	1	..	..	..	1	5	3	4	10	57	26
17	823.3	70,346	85.5	..	..	..	..	2	7	3	4	6	66	19
18	873.0	35,708	40.9	..	..	..	..	..	6	1	1	4	28	6
19	413.8	44,860	108.4	..	..	..	..	..	3	..	2	3	33	10
20	461.4	27,463	59.5	..	..	..	1	..	2	1	2	1	27	6
21	483.2	78,741	163.0	..	..	..	..	..	3	..	3	6	55	21
22	1,361.6	81,283	59.7	..	..	1	..	1	10	2	..	9	106	27
23	736.0	65,561	89.1	..	..	..	..	2	5	2	1	5	75	12
24	1,198.5	80,466	67.2	..	..	1	..	1	6	3	..	2	73	15
25	567.8	63,597	112.0	..	..	..	..	2	5	1	1	2	62	8
26	3,590.2	177,963	49.5	1	..	..	..	1	19	5	3	11	165	39
27	400.7	76,000	189.6	..	..	..	..	..	1	1	2	3	43	11
28	884.4	77,451	87.6	..	..	..	..	1	4	1	2	2	80	14
29	3,800.0	72,351	19.0	..	..	..	3	..	4	3	..	2	57	9
30	5,401.1	76,406	14.1	..	..	..	..	2	6	2	2	6	103	17
31	6,312.3	30,988	4.9	..	..	..	..	1	2	..	2	1	41	10
32	5,479.5	17,419	3.2	..	..	..	..	..	..	..	..	1	9	2
Total....	38,977.8	1,634,508	41.9	6	..	3	5	17	129	46	54	122	1613	394

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BOROUGH OF THE BRONX.

Wards.	Area in Acres.	Population U. S. Census 1910.	Number of Persons to the Acre.	Typhoid Fever.	Smallpox.	Measles.	Scarlet Fever.	Diphtheria and Croup.	Pulmonary Tuberculosis.	Lobar Pneumonia.	Broncho-Pneumonia.	Diarrhoeal Diseases.	All Causes.	Deaths of Children Under 5 Years.
23	4,267.0	268,880	63.0	2	..	..	..	1	16	9	8	18	241	53
24	22,255.8	162,062	7.3	..	..	1	..	1	20	10	11	11	235	39
Total.	26,522.8	430,942	16.2	2	..	1	..	2	36	19	19	29	476	92

BOROUGH OF QUEENS.

1	4,650.0	61,763	13.3	..	..	..	..	3	6	3	2	4	68	21
2	14,700.0	105,219	7.2	..	..	..	..	..	11	4	5	6	99	30
3	22,000.0	37,171	1.7	..	..	..	..	2	1	2	7	2	65	13
4	36,600.0	67,412	1.8	..	..	..	..	3	18	3	3	1	124	15
5	3,770.0	12,476	3.3	..	..	..	..	..	..	2	2	..	16	5
Total.	81,720.0	284,041	3.5	..	..	..	..	8	36	14	19	13	372	84

BOROUGH OF RICHMOND.

1	3,340.0	27,201	8.1	..	..	..	..	1	2	..	1	1	38	5
2	4,130.0	16,871	4.1	..	..	..	..	..	3	2	1	3	33	8
3	10,050.0	19,812	2.0	..	..	..	..	..	..	..	..	1	21	6
4	8,180.0	10,662	1.3	..	..	..	..	..	..	1	1	..	12	1
5	10,900.0	11,423	1.0	..	..	..	..	..	1	..	1	..	9	..
Total.	36,600.0	85,969	2.3	..	..	..	..	1	6	3	4	5	113	20

DEATHS ACCORDING TO AGE GROUPS, OCTOBER, 1920.

Boroughs.	All Ages.	Under 1 Year.	1 Year and under 2.	Under 5 Years.	5-15 Years.	15-25 Years.	25-45 Years.	45-65 Years.	65 Years and over.	Colored.	Chinese.
Manhattan.	2,073	330	55	444	76	114	394	608	437	156	13
The Bronx..	476	67	13	92	20	24	78	142	120	9	..
Brooklyn...	1,613	299	58	394	77	87	260	419	376	37	1
Queens.....	372	58	8	84	16	19	55	107	91	7	..
Richmond..	113	15	2	20	6	6	19	25	37	3	..
City of N.Y.	4,647	769	136	1,034	195	250	806	1,301	1,061	212	14

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INFECTIOUS DISEASES.

Number of Cases Reported in the City of New York, by Boroughs, During October, 1920, and October, 1919.

	Manhattan.		The Bronx.		Brooklyn.		Queens.		Richmond.		City.	
	October.		October.		October.		October.		October.		October.	
	1920	1919	1920	1919	1920	1919	1920	1919	1920	1919	1920	1919
Typhoid Fever	60	79	18	15	47	39	10	6	7	5	142	144
Typhus Fever	1	1	....	....	....	....	....	....	....	....	1	1
Malaria	4	7	....	....	2	1	....	....	....	....	6	8
Small Pox	....	....	....	1	....	....	....	....	....	....	....	1
Measles	86	141	15	136	28	49	3	8	2	37	134	371
Scarlet Fever	146	87	51	43	146	76	37	21	8	12	388	239
Whooping Cough	139	39	39	34	75	45	30	16	14	6	297	140
Diphtheria and Croup	338	300	123	82	340	323	120	138	13	25	934	868
Leprosy	....	....	....	....	....	....	....	....	....	....	....	....
Mumps	40	68	14	8	12	25	....	7	2	4	68	112
German Measles	6	11	1	3	6	1	....	1	....	....	13	16
Chicken Pox	107	75	34	26	69	58	18	7	2	3	230	169
Glanders	....	....	....	....	....	....	....	....	....	....	....	....
Anthrax	....	1	....	....	....	....	....	....	....	....	....	1
Rabies	....	....	....	....	....	1	....	....	....	....	....	1
Tetanus	....	....	....	....	5	2	1	....	....	....	6	2
Pellagra	....	....	....	....	....	....	....	....	....	....	....	....
Pulmonary Tuberculosis	890	937	157	201	352	350	95	71	21	14	1,515	1,573
Other Tuberculous Diseases	....	....	....	....	....	....	....	....	....	....	....	....
Syphilis	1,091	1,229	94	133	578	491	40	30	32	7	1,835	1,890
Gonorrhoea	151	205	24	25	211	74	8	7	1	....	395	311
Cerebro-Spinal Meningitis	6	5	1	2	3	5	3	1	....	....	13	13
Poliomyelitis	17	3	12	1	26	4	5	....	....	1	60	9
Hookworm	....	....	....	....	....	....	....	....	....	....	....	....
Trichinosis	....	....	....	....	....	....	....	....	....	....	....	....
Influenza	18	65	15	29	23	54	5	3	2	4	63	155
Pneumonias	287	86	58	29	153	44	56	6	5	5	559	170
Total	3,387	3,339	656	768	2,076	1,642	431	322	109	123	6,659	6,194

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MONTHLY METEOROLOGICAL SUMMARY.

OCTOBER, 1920.

Date.		Temperature. (Degrees Fahrenheit.)				Relative Humidity. (Per Cent.)	Precipitation (Inches.)		Wind. (Miles per hour.)			Sunshine. Number of Hours.
		Maximum.	Minimum.	Mean.	Departure of Mean from Normal.	8 a.m.	Rain.	Snow.	Average Velocity.	Prevailing Direction.	Maximum Velocity and Direction.	
F	1	60	50	55	— 7	78	0	0	25.7	W	37 W	3.0
S	2	61	46	54	— 7	84	0	0	20.0	W	30 W	11.7
S	3	68	49	58	— 3	63	0	0	13.1	SW	29 SW	11.2
M	4	75	53	64	+ 4	80	.08	0	14.0	SW	26 N	8.5
T	5	62	46	54	— 6	66	0	0	28.3	NW	55 NW	10.8
W	6	60	45	52	— 8	66	0	0	17.1	N	30 N	9.5
T	7	66	46	56	— 3	75	0	0	9.4	N-NW	17 N	11.5
F	8	74	52	63	+ 4	68	0	0	8.5	N	16 N	11.4
S	9	78	58	68	+ 9	67	0	0	9.2	NE	16 NE	11.4
S	10	76	58	67	+ 9	54	0	0	21.1	NW	38 NW	11.4
M	11	74	55	64	+ 6	67	0	0	13.5	SW-NW	32 NW	10.0
T	12	64	52	58	+ 1	91	.05	0	8.5	N	17 NE	1.3
W	13	71	50	60	+ 3	80	0	0	9.5	N	20 SW	11.2
T	14	82	58	70	+14	78	0	0	13.7	NW	31 NW	11.2
F	15	75	61	68	+12	61	0	0	8.7	E	18 N	11.1
S	16	70	57	64	+ 8	91	.19	0	7.0	N	37 NW	4.3
S	17	68	57	62	+ 7	87	T	0	6.8	N	18 NE	3.4
M	18	64	56	60	+ 5	98	T	0	5.9	SE	10 SE	.0
T	19	66	58	62	+ 8	88	T	0	8.8	W	22 W	0.9
W	20	72	55	64	+10	84	0	0	10.3	N	21 N	10.9
T	21	80	58	69	+15	75	0	0	15.2	SW	35 W	10.9
F	22	80	60	70	+17	69	0	0	23.1	NW	51 NW	10.8
S	23	64	51	58	+ 5	52	0	0	11.1	N	21 NE	10.8
S	24	66	50	58	+ 6	76	0	0	11.8	SW	25 S	10.8
M	25	69	52	60	+ 8	97	T	0	14.5	SW	24 SW	6.7
T	26	68	59	64	+13	88	0	0	14.2	SE-S	35 S	8.7
W	27	70	62	66	+15	87	T	0	30.0	S	48 S	5.7
T	28	68	54	61	+10	83	.44	0	13.9	NW	34 SW	.0
F	29	54	39	46	— 4	67	.01	0	26.4	W-NW	46 NW	5.7
S	30	51	37	44	— 6	57	0	0	23.9	W	39 NW	9.7
S	31	63	53	53	+ 3	58	0	.....	18.4	W	33 W	10.4
Month		Mean 68.4	Mean 52.5	Mean 60.4	Blank	Mean 75	Total 0.77	Total 0.0	Mean 14.9	Prev'l'g NW	Blank	Total 252.1
Normal		63.1	48.8	55.6	Blank	76	3.71	T	11.7	NW	Blank	Possible 344.1

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LECTURING ON SEX HYGIENE.
INDEX FOR 1920.

MONTHLY BULLETIN
OF THE
DEPARTMENT of HEALTH
CITY OF NEW YORK

Public health is purchasable. Within natural limitations a community can determine its own death rate.

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ROYAL S. COPELAND, M. D., Commissioner of Health.

VOL. X. DECEMBER, 1920. No. 12.

THE NARCOTIC DRUG PROBLEM.

By ARTHUR D. GREENFIELD.

Drug addiction is a subject to which considerable attention has been given of late by the medical profession and by government officials whose duties have brought them into contact with it. The general public has not had much opportunity to take an intelligent interest in it, because the sources of its information have usually been confined to sensational stories and the facts have been much distorted. Even the medical profession has not had a very clear understanding of it or taken very much interest in it until within the last year or two. It has now waked up to the importance of its relation to the problem, and at the last annual meeting of the American Medical Association, held in April, 1920, this topic was given a great deal of serious consideration.

One of the questions most often asked by those unfamiliar with the subject is: How many drug addicts are there in the United States? This question is difficult to answer. Exact statistics of drug addicts are impossible to obtain, and the tendency has been, until very recently, to exaggerate the number. In April, 1919, a report was made by a committee appointed by the Secretary of the Treasury to study the subject, in which the number of addicts was estimated as being in excess of one million. The data upon which this estimate was based were admittedly little more than guesswork, and it is now believed that the estimate was far too high. In New York City the number of addicts had been estimated by the Health Commissioner at from one hundred thousand to two hundred thousand. A system of compulsory registration was put in force in that city in the summer of 1919, which afforded the best means as yet made available for enumeration of addicts, and the total registration was about 7,500. The only safe conclusion that can be drawn in the present state of our knowledge is that the number of addicts is not so large as has been supposed; that it is impossible at present to state the number even approximately, and that it is therefore impossible to be sure whether the number is, or has been in a recent period, increasing or decreasing.*

*"While exact data showing any marked decrease in the number of addicts in the country are not obtainable at this time, it is an established fact that the activities of the Bureau have resulted in a decrease in the amount of narcotic drugs sold and used." From 1920 Report of Commissioner of Internal Revenue, p. 33.

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A point upon which there has been considerable discussion, but as to which medical opinion has now pretty well crystallized, is the nature of addiction. There has been some argument as to whether it should be called a habit or a disease, as to whether it is curable or not, and as to the exact effects of the habitual taking of drugs upon the individual. Without going into the details of this discussion, I will state the conclusions now generally accepted. Morphine and heroin are made from opium, and are narcotics. Cocaine is a derivative of coca leaves, and is, as used by addicts, a stimulant, although its principal use in medicine is as a local anaesthetic. A distinction must therefore be drawn between these two types of drugs. Cocaine does not produce a habit in the sense in which narcotics do; it can be voluntarily discontinued in most cases without serious discomfort, and is apt to be taken occasionally, as demanded by circumstances, rather than regularly and continuously. On the other hand, if taken regularly in large quantities for a sufficient length of time, it has serious effects upon the brain and upon all the tissues of the body. The opiate drugs are in a different category. The taking of these drugs, however begun, usually develops into a regular habit of taking three or four doses a day, and while it is possible to stop after the habit has become confirmed, the result of doing so is usually very considerable suffering and a set of symptoms known as "abstinence phenomena" or "withdrawal symptoms." The best medical opinion is that the effects of the opiates are purely functional, and that the symptoms upon the withdrawal of the drug, so far as they are not psychic in origin, are mainly the natural results of the release from a long maintained functional depression or inhibition, taking the form of an exaggerated activity of functioning of the organs that have been under the influence of this depression. These symptoms are short lived, and complete cure is possible in all cases not complicated by physical conditions independent of the addiction; in other words, the addict can be brought, upon withdrawal of the drug, into as good condition as that in which he was prior to his taking the drug. This is true, generally speaking, regardless of the duration of the habit or the quantity taken, so it is safe to conclude that the opiate drugs do not, as a rule, produce any permanent physical effects.

Some addicts voluntarily stop taking opiates and "suffer it out," as they express it, without medical assistance, a process which in their slang is called taking "cold turkey"; most of them, however, have not the moral courage to do this and carry it through successfully. In the absence of complications there is no danger in this process, but it would not be safe to have it generally followed without medical supervision, as there might be some latent disease unknown to the addict himself which would make an abrupt withdrawal of the drug inadvisable. It is generally conceded that humanity demands medical treatment during the period of withdrawal, such treatment consisting usually of methods designed to aid elimination and reduce the suffering, the acute stage of which does not last more than three days. Some physicians believe in a gradual reduction of the dose, but the best opinion seems to be that this is unnecessary in ordinary cases, and merely results in unduly prolonging the treatment. The fact that a large proportion of addicts who have received withdrawal treatment with apparent success will sooner or later resume the habit has been observed, and it has been argued from this that addiction is really incurable, or at least very difficult to cure unless special methods of treatment are used. It is now generally recognized that this large proportion of relapses is due to the fact that most addicts have acquired the habit by reason of some inherent defect of character which existed before the drugs were taken and remains after the habit is cured. This is something quite distinct from the drug habit, though it may lead to it, and, of course, would require an additional and different kind of treatment from that given for the condition accompanying withdrawal of the drug. Numerous instances of persons being cured by the usual methods and remaining indefinitely with no impulse to resume the habit, these persons being

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usually those who have acquired it through necessary medication for some acute condition, prove that the reasons for relapse must be sought elsewhere than in the effects of the drugs or the treatment for withdrawal.

In any serious consideration of the drug problem it is necessary to bear in mind that it is universally admitted that these drugs cannot be dispensed with in medical practice. There are effective and less harmful substitutes for cocaine in many of its uses, and many physicians believe that heroin is a form of opiate they could do just as well without, but all agree that morphine and opiates in other forms are absolutely necessary, and that no other drugs are known which will take their place. Morphine and codeine, as well as laudanum and paregoric, all of which are drugs useful in medicine, are also used by addicts, and there is probably little difference, except in degree, in the nature of the addiction to opiates in any of the various forms in which they are commonly used. Not only is there a legitimate use for the opiates in acute or temporary conditions, both medical and surgical, but there are certain diseases in which their regular use for an indefinite period is required. In painful and hopeless cancer, for example, no humane physician would hesitate to create and continue until the death of the patient what would under other conditions be regarded as an addiction to the use of morphine. It is evident, therefore, that the problem cannot be solved by any such simple method as the absolute prohibition of these drugs. Indeed, it is probable that the number of persons who at one time or another require the administration of some opiate drug in medical or surgical treatment is greatly in excess of the number of addicts, so that the preservation of full freedom in legitimate use is at least as important as the prevention of addiction.

Statistics as to the amount of opium or its derivatives required or used in legitimate medication are as difficult to obtain in reliable form at the present time as statistics of the number of drug addicts. The report of the Treasury Committee before referred to took up this phase of the subject, and showed a marked increase in the total amount of opium consumed in the United States in the period from 1860 to 1915; it also gave a comparison with the consumption in certain other countries, from which it appeared that this country leads the others in per capita consumption by a very substantial margin.* No means was found, however, of making an accurate determination as to how much of this consumption was in the nature of legitimate medication. The question of how much is used or required in medicine cannot really be answered until some standard of definition is adopted. While all doctors agree, as has been stated, that the opiates are useful and necessary, there has never been any authoritative statement expressing a consensus of professional opinion as to the exact conditions in which they should be used in the treatment of disease. In practice there is a great diversity. Some physicians are excessively careful, and refuse to employ them in cases where their use would really be beneficial; a greater number are probably much too free in their use. A few even profess their belief that it is proper to keep up the supply of opiates to the ordinary addict, and practice accordingly.

In stating the problem presented by these facts it will be seen that it consists essentially of two main elements: first, to prevent the spread of addiction without limiting or hampering the legitimate use of the narcotic drugs; second, to provide medical treatment for those who have become addicted to these drugs. While that is a fair statement of the narcotic drug problem as such, it may be useful to call attention here to the fact that this problem is itself merely a phase of a larger problem. Human nature is so constituted that many individuals are always found to vary in greater or less degree from what may be considered the normal standard of character. There are individuals who conform in all respects to social standards, and who either do not

*A new and more carefully planned survey is now being made by the Internal Revenue Bureau to determine the actual amount of present consumption.

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feel the impulse to deviate from these standards, or are fully able to restrain it if felt. These individuals may be regarded as constituting the normal type. Those who deviate from this type range from the person who habitually eats more than is good for him to the vicious criminal or lunatic. Psychologists believe that this tendency to deviate from the normal is due to psychic defects which may often have a traceable physical cause. Some attempts have been made to deal with this problem as a whole along scientific lines. Studies of heredity, of the functions of the internal secretions, of methods of mental examination and classification and experiments in psycho-analysis have all shown promise of helping to a solution, and as scientific knowledge in progressing rapidly, I think it is probable that in the course of time these attempts will be successful. In the meantime the practical point of view prevails, in accordance with which the larger problem is split up into parts consisting of the various ways in which the deviation happens to be manifested, and we have the liquor problem, the crime problem, the insanity problem, the sex problem, the narcotic drug problem and various others.

The two elements of the narcotic drug problem have a close practical relation to each other. The prevention of the spread of addiction is usually considered as a matter to be accomplished by restrictive legislation. The experience of the municipal narcotic dispensaries which have been in operation in certain cities, as well as general observation of addicts and their ways, shows that the addicts themselves are a principal means of spreading the habit and supplying the drugs to others. Legislation, to be effective, must therefore operate to cut off the supply of narcotics from those already addicted. As this involves suffering and occasional danger, such legislation should go hand in hand with measures to provide facilities for medical treatment, which must, of course, be given under institutional control. There is a good common sense reason for urging that ample provision be made for the cure of existing addicts, quite apart from the obvious one, on grounds of justice and humanity, that law enforcement ought not to entail unnecessary hardship. The suffering caused by deprivation of the drug, or the dread of such suffering, on the part of those who have become slaves to it, creates a demand so great that they will make extreme sacrifices to obtain the continuance of their supply unless medical treatment insuring a comparatively painless cure is available. This demand, in turn, by making the illicit supplying of the drug highly profitable, makes the enforcement of any restrictive law correspondingly difficult. While it might be possible, by the appropriation of large sums of money for law enforcement, to get effective results without making any provision for the cure of addicts, I believe that a less sum would be required to produce the same results if part of it were applied to making such provision. It has been seen that a large proportion of addicts retain a tendency to indulgence after they are cured, but this is by no means of the compelling force that it has during the maintenance of the habit; the enforcement of restrictive laws would certainly be much easier if the financial inducements for their violation depended only on those who were not at the time taking the drugs. Not only are remedial measures important as an aid to law enforcement, but the converse is equally true. Money spent in curing addicts is practically thrown away if it is possible for them, after discharge from the institution, to obtain the drug easily, cheaply and without risk. A few will feel no temptation to relapse. Some of the others can be helped by scientific care during a period of segregation following the cure, by careful selection of the environment to which they are returned after discharge, and by supervision in the nature of a probation system for a further period, to resist such temptation as they may feel. The greater number, in all probability, will resume the habit sooner or later unless the law is enforced in a way to make it difficult and expensive for them to get the drug. It is thus evident that the two elements of the problem are so closely interdependent that any practical method for its solution must take them both into account.

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In the national field the Harrison Narcotic Law, passed by Congress and in effect since December 17th, 1914, is a measure designed to cover completely the first element of the problem. This law seeks to restrict the distribution of cocaine and the opiate drugs by forbidding sales to consumers except by physicians treating patients or by druggists filling prescriptions. As a restrictive measure it is well framed. It fully preserves the right of legitimate medical use, since it imposes no restrictions upon physicians except that the drugs must be prescribed or dispensed by them " in the course of professional practice only." It is true that it imposes a registration tax, the amount of which is higher than many physicians think proper, and it gives power to an administrative official, the Commissioner of Internal Revenue, to make regulations, a power which might, if not used with discretion, become a source of burdensome restrictions upon physicians, druggists and patients. These defects, if they are such, can be easily corrected. On the other hand, the actual operation of the law has shown that the clause governing medical use needs to be made more definite, since the privilege thus given has been abused by some physicians, who have made themselves purveyors to addicts under the pretence of medical treatment. The so-called "ambulatory treatment" of drug addiction, which consists in prescribing or dispensing narcotics to addicts for self-administration while the addicts are at large, and which is usually practiced under the guise of a gradual reduction cure, has been emphatically condemned by the American Medical Association, and the words "professional practice" in the law should be defined or construed so as clearly to forbid this abuse. Possibly this may be accomplished by judical construction, or it may require amendment of the text of the law; in any case, it could and should be clearly defined in state narcotic laws, as it has been done in two or three states.

Apart from these and other matters of detail the law seems to be a very satisfactory measure for dealing with the preventive element of the problem. In spite of the fact that the remedial side of the problem has not yet received proper attention, and in spite of other handicaps which will be noticed later, I believe that in the last two years the operation of the Harrison Law has caused a decided decrease in the spread of addiction. In March, 1919, the Supreme Court upheld the constitutionality of the law, which had up to that time been a matter of considerable doubt, and a much more determined effort at its enforcement was then begun than had been practicable before. Of course my opinion as to the actual effects of this enforcement cannot at present be proved, as I have already pointed out the unreliability of the statistics, and in fact there has been no attempt made to obtain any general statistics for the period mentioned, but it is based on personal observation and is shared by government officials of experience.

One significant fact in support of this opinion is that very few addicts who have been examined within the past year or so have formed the habit recently. The 1920 Report of the Commissioner of Internal Revenue states (p. 33) that there has been during the past year an " increase in the number of violators apprehended and successfully prosecuted, and a resultant decrease in the number of persons illicitly dealing in these drugs."

The second or remedial element of the problem cannot be successfully handled without special facilities. Private institutions for the treatment of drug addicts on a commercial basis have existed for some time and are now doing business in considerable numbers, but their charge for treatment is usually high. For this reason, and also because they are usually available only to those voluntarily seeking treatment, they do not reach the class of addicts which it is most important, from the standpoint of prevention of the spread of the habit, to take care of. Most general hospitals where provision is made for the treatment of indigent sick persons without charge do not care to take drug addicts, so their treatment is for the greater part confined to

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psychopathic, correctional and penal institutions. This method has some advantages, chiefly in the assurance it gives of efficient control of the addicts undergoing treatment, but it also has marked disadvantages. From a sentimental point of view, objection has been raised to classing addicts with lunatics or criminals, and there is some apparent justice in this objection, at least as applied to those whose addiction was created through unavoidable medication. From the practical standpoint the principal objection to treating addicts only with insane persons and criminals is that it discourages many from submitting themselves voluntarily to treatment. This is not only because of the stigma conceived to attach to such classification, but also because the methods of treatment in many such institutions are not regarded as sufficiently humane. It also involves an association which is not beneficial to the younger addicts, who are usually of a type easily influenced by their associations.

Isolated experiments have been made in some large centers in providing special hospital wards for the withdrawal treatment. Farms or colonies have also been proposed, either for the entire course of treatment and care deemed requisite to restore the physical health and moral tone of the addict as well as to take him off the drug, or merely for the so-called "after care" of those who have already been through the withdrawal elsewhere. The problem is by no means a simple one, for even if it were granted that the need is of sufficient relative importance to justify the requisite expenditure of public money, in rural districts it is a temporary need at most, and any special facilities provided would shortly have to be abandoned or turned to some other use. The most practical way of meeting the need seems to be the establishment of institutions at central points, designed to receive inmates from a large tract of surrounding territory. Such institutions should include both hospital and farm features, so as to cover the whole course of treatment; they should be supported by state funds, which should be available to pay transportation of those committed to them and to provide temporary support for their families when needed; they should also be backed by state laws providing for the commitment of all persons sent to them. Commitments on voluntary application should be encouraged, but involuntary commitments on the application of interested parties should also be provided for, and all commitments should be for an indeterminate period, discharges to be made only on the certificate of the medical officers in charge or upon court order. Even with strict law enforcement the probability is that such institutions would be needed for at least a year or two, and as the plant would not be expensive and would be capable of other uses this would meet the economic requirements of the situation better than any other method having a similar aim.

If institutions of this sort were properly manned by a skilled and intelligent medical staff, experiments could be made with various modes of treatment of the underlying psychical defects, and it is not unlikely that encouraging progress would be made toward securing a larger proportion of lasting cures than has been the rule heretofore. Possibly the necessity for permanent segregation of a certain type of addicts would become apparent.

The reason I have suggested that such institutions should be supported by the states is that their legal powers are ample to handle all features of the undertaking, while those of the federal government are limited. An attempt has been made, however, to obtain financial aid from the government, in the form of a bill introduced in the last Congress by Senator France. By the terms of this bill Congress was to appropriate several million dollars, which was to be applied through the Public Health Service in aiding the states and municipalities to make provisions for the medical treatment and care of addicts. It was contemplated that the states and municipalities would appropriate money, and the congressional appropriation was to be used by contributing to each state an amount equal to that which should have been appropriated

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in that state, thus in effect doubling its financial resources available for the purpose. The intent of this bill was excellent, and it evidenced a wise appreciation of the importance of this phase of the problem and the necessity of making provision for it. The bill unfortunately failed to pass, but it is to be hoped that some such measure can be put through in the near future.

Some other plans that have been tried have not been so wisely conceived. A scheme operated in New York City and tried with variations in a number of other cities throughout the country was the registration of addicts and supplying to them, under official supervision, a limited amount of narcotics. It was thought that this would take away the inducement for them to resort to illicit sources or criminal means of obtaining drugs, that it would aid the authorities to keep tabs on the addicts and to have them under constant supervision, and that it would be a means of obtaining statistical information. It was the operation of this plan which most clearly exposed the fallacy and harmfulness of the ambulatory treatment of drug addicts, and proved most conclusively that institutional control is absolutely necessary to get beneficial results. Even under the most careful management abuses of all sorts prevailed, and the plan has now been recognized as a failure and has been already discontinued in most places. In New York City the municipal dispensary, popularly known as the "narcotic clinic," remained in operation about ten months, and at one time had a daily attendance of more than two thousand addicts. One of the most objectionable points about this plan was the fact that it expressed a policy directly opposed to that of laws such as the Harriosn Law, which aim to prevent the spread of addiction by cutting off the supply of drugs to addicts. Instead of helping the enforcement of the law, as proper remedial measures should do, it proved a serious obstacle to its enforcement.

In this connection attention should be called to the importance of discrimination between legitimate use and abuse in any laws designed to deal with this problem. In some of the state narcotic laws, such as that of New York, no serious effort is made to distinguish between the supplying of narcotics to addicts and supplying them to legitimate patients. Both are permitted if done under the pretence of medical treatment, and control is sought to be exercised by a set of detailed and more or less onerous regulations applying to both. The principle underlying this type of legislation is fundamentally unsound, because it merely discourages honest and reputable physicians and druggists from having anything to do with these drugs, while the profits derived from the addict trade make it well worth the while of the others to comply with all the technical requirements of the law. A physician who is a prominent official of the New York City Health Department recently prescribed morphine for a patient who was dying from cancer, and the prescription had to be taken to four druggists before one could be found who was willing to fill it, while at the same time addicts were getting their prescriptions filled without difficulty at certain stores.

A similar objection applies to purely arbitrary restrictions of all kinds. The American Medical Association, for example, has recommended that the national supply of narcotic drugs be limited to the amount estimated to be required for legitimate use. From what has been said in an earlier paragraph, it will be seen that the fixing of this amount would be a very difficult matter. Much more careful investigation than has yet been made would be needed as a preliminary step, and even that would have to be preceded by an investigation to determine a standard or definition of what kinds of use are to be deemed legitimate. Assuming, however, that a definite amount could finally be arrived at, it is extremely probable that the chief results of limiting the total supply to this amount would be merely a great increase in the price of the drugs and considerable difficulty in obtaining them for medical purposes. We already have a law purporting to restrict distribution to legitimate channels. If this law is so ineffective that measures of another kind are required, it follows that, in spite of

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the law, a considerable part of the supply reaches illicit channels of distribution. A reduction of the total supply available for both lawful and unlawful distribution would not in itself help to enforce the legal provisions discriminating between the two, but would intensify the competition between them. Those making a profit by illicit distribution could probably afford to outbid the legitimate distributors, and while there would undoubtedly be a reduction of the total amount used for the maintenance of addiction, it seems inevitable that this reduction would be obtained at the cost of serious inconvenience to the general public, a cost which I believe would be found to be more than the value of the benefit.

Realizing, presumably, that the limitation proposed would not be effective in the way desired if not helped out by some new method of insuring proper distribution, the American Medical Association has made the further suggestion that the Public Health Service be given a monopoly of the distribution of these drugs, such distribution to be made by it "to properly qualified and responsible persons." This proposition is so vaguely formulated that it cannot easily be subjected to critical analysis, but I think any concrete and detailed plan which might be worked out along this line would prove no more effective than the present scheme of regulating distribution. Unless all licensed physicians and druggists were able to obtain supplies of the opiate drugs the public would be seriously inconvenienced. Any system of selection that could be put into operation would necessarily work a hardship, and it would moreover be no easy task to frame any such plan which would stand the legal test of constitutionality. The Association introduces its proposals by the statement, in effect, that while it recognizes that much good has been accomplished by the Harrison Law, it believes that the narcotic drug problem cannot be solved through any such restrictive licensing system unless it is coupled with some of the plans they propose. It seems to me that this statement contains an assumption which is not justified by the evidence. I believe that when the system of regulation embodied in the Harrison Law has had a fair test it will be found not only adequately effective as a method of attacking the first element of the problem, but superior to any of the experimental propositions urged as a means of dealing solely with that feature of the problem, in that it involves less interference with the legitimate use of the narcotic drugs.

In the first place, the Harrison Law, or rather the principle of regulation it exemplifies, has not yet had a fair trial. It was not until March, 1919, that the constitutionality of the law was settled, and that a really determined effort at its enforcement could be inaugurated. The 1920 Report of the Commissioner of Internal Revenue (p. 38) shows that the receipts for that year under the law, and thus the money available for its enforcement, were more than double the amount collected the previous year. The law itself is in need of amendment or clarification along the lines already pointed out, with reference to the practice of physicians, in order to reach its maximum effectiveness. The evasions of the law have been accomplished in great part by smuggling from other countries, an evil which is capable of being largely held in check by appropriate international agreements. The Harrison Law, in common with all other purely restrictive measures of any kind, requires for its favorable operation the aid of remedial measures. The narcotic dispensaries have acted hitherto as serious obstacles to the enforcement of the law, and the same may be said of certain state laws, which could easily be made harmless by amendment or by clarification of the Harrison Law.

In the second place, there is no evidence that during the period since March, 1919, there has not been a very satisfactory degree of effectiveness in the enforcement of the law and in the accomplishment of its underlying purpose. The Treasury Committee report, which has been mentioned, is quoted by the American Medical Association, but as it was made in April, 1919, it does not cover this period. On the other hand,

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the establishment of the narcotic dispensaries was stimulated by a marked increase in the effectiveness of the enforcement of the law. That in New York City, for example, was started in April, 1919, and the reason for establishing it was that the enforcement of the Harrison Law had at that time been so effective that a great number of addicts were suddenly deprived of their supply of narcotics and had to be taken care of. I have already quoted statements from the Report of the Commissioner of Internal Revenue for 1920 showing increased effectiveness for that year.

A conservative spirit in approaching this problem, which is not a simple one, is to be desired, and before deciding upon the adoption of new and experimental solutions a careful and scientifically conducted investigation should be made to determine first, whether any new plans are necessary, or whether good progress is not now being made by existing methods; second, whether improvements of existing methods without change of principle could not be made, which would add to their efficiency; and third, whether it is desirable to attempt an immediate, one hundred per cent. effective enforcement of purely restrictive legal measures in advance of adequate provision for dealing with the remedial requirements of the situation. If through such an investigation it were possible to get the facts I believe, as I have said, that it would be shown that during the past two years there has been a substantial decrease in the number of drug addicts, and particularly in the number of those newly forming the habit.

To sum up, I think the problem is now in a fair way of being satisfactorily solved. I believe that attempts to hasten its solution could most advantageously take the following forms:

1. Encouragement of the supplying of proper institutional facilities for the treatment and care of drug addicts.
2. International agreements calculated to prevent smuggling of narcotics.
3. Strengthening of the Harrison Law by a proper definition of "professional practice."*
4. Amendment of state laws to make them conform to the Harrison Law, to provide for commitment of addicts, and, if possible, uniformity of state narcotic laws.
5. Determination, by proper investigation, of the facts as to recent effectiveness of present methods and the respects in which they could be strengthened without adopting new methods, and of the facts as to legitimate use, including a consensus of medical opinion as to the manner and conditions of legitimate use as well as a quantitative determination.
6. Education of the public upon the subject, to the end of creating public interest in the problem, and an informed and intelligent public opinion.

*The importance of this will be apparent from the fact that out of a total of 239,766 persons registered under the Harrison Law in 1920, the number registered as practitioners was 168,878.

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LECTURING ON SEX HYGIENE.

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There are many who regard with cynicism any attempt to convey information on the subject of sex to young women and men. They doubt whether any good can be done by such sex education. Some even go further, and state that only harm can come from an open discussion of the subject. Others regard the problem as such a delicate, intricate one, with its many ramifications so interwoven with all the other problems of life, economic, social, religious, political, as to be absolutely hopeless of solution. They therefore, resign themselves to a state of apathetic silence on matters of sex, consoling themselves with the familiar phrase, "Oh! what's the use."

It cannot be denied, however, that there is an insistent demand for such knowledge on the part of all young people. This demand is always satisfied, too, and unfortunately, in the great majority of cases, in a most harmful manner. At a very early age, the little boy or girl usually become familiar with matters of sex, thanks to the pernicious activities of other boy and girl associates, servant girls, stable-hands, sexual perverts and their like. This information and the manner in which it is conveyed, cause a most sensualizing outlook on matters of sex, so that instead of regarding the matter with the respect such a wonderful, vital process deserves, it comes to be looked upon as something to be ashamed of, as something filthy and sordid.

At the time when the first permanent sex impression is received, about the ninth year, as shown by Dr. Exner, the mind is sufficiently plastic to permit of the moulding of character which will determine the conduct of the individual in his future existence. Our educational efforts are of the greatest value when they attempt to guide inclinations and tendencies, rather than to convey positive facts when the cast of the character has been definitely moulded. The young shoot can be readily bent in the desired direction, but once it has been developed into a sturdy oak, it is much more difficult to accomplish the same purpose.

The child of yesterday, is the adult of to-day. Our present-day attitude towards matters of sex is largely the result of the early training we received at the hands of our childhood preceptors—the aforementioned servant girl and stable-hand.

It is universally agreed that in order to accomplish the best results, sex education should be conveyed at an early age, and preferably by the child's best educator, its mother. It is a great rarity, however, to find a mother who performs this duty. Her own sex horizon has been so distorted by her education or, more truly, lack of it, that she fears to dirty the clean virgin mind of her child by speaking on such subjects. Indeed, most mothers, because of their own lack of education in these matters, do not feel themselves capable of conveying such information to others.

Ideally, the parents should be the sex educators, but they, because of their own lack of training, fail to live up to their responsibilities. Their children grow up to be parents whose deficiencies are equally marked. A vicious cycle of ignorance is thus established. To break it, attempts are now being made to convey information on subjects of sex to those who can best be reached by the public educators—the young adults. The value of such educational efforts is twofold in that—one, it may influence the lives of those to whom it is directed, and, two, it prepares a group of educators who will exert a profound influence.

How to present the subject of sex to the young adult is a question. Preferably, it should form part of a course in biology or physiology. However, the great mass of young people cannot be reached in this way to-day, and so it becomes necessary

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to present the subject from the public platform at the places where young folks congregate.

As lecturer of the Department of Health of this city, I have had the opportunity to deliver some ninety lectures at various factories, young men's associations, settlements, and other places.

I presented the matter in a series of three talks—the first dealing with the subjects of reproduction and heredity. Starting with a description of the process of reproduction as it occurs in the unicellular organisms, and taking the amœba as an example of this class, I proceed on to a discussion of the process as it occurs in the higher forms of plant life—then in some species of the animal kingdom, leading up to man. I mention the Darwinian theory of inheritance and describe the simpler phases of the Mendelian law of inheritance, applying it first to plants and animals and then to human beings—finding with a narration of the life histories of some prominent American families.

The purpose of this first lecture is not so much to impart knowledge on the subject as to correct the common impression that reproduction is a dirty process to be discussed only among members of one sex, behind closed doors, and then only in whispers. I think it essential that before any attempt is made to impart knowledge of their own sex lives to adolescents, that the perniciously false ideas concerning reproduction be destroyed, and in their place the conception be instituted that the process is a most remarkable and wonderful one.

The second lecture deals with some of the physical, social and moral aspects of the sex problem. I endeavor to show how vital a part sex plays in our daily lives, and how important it is that we guide that impulse as we will, instead of being overwhelmed by it. I describe the genito-urinary organs, and their functions, and then go to a discussion of masturbation and nocturnal emissions. The major portion of this lecture, I devote to a consideration of the sexually continent life—its physical basis, its relation to the family, to civilization, and to the life of the individual, and measures hindering and aiding its accomplishment.

The third lecture consists of a brief description of the venereal diseases. While the fear motive should possibly be the one of least consideration from the ideal point of view, there is, nevertheless, no denying of the fact that it is a powerful deterring factor with many. I conclude this talk with a brief resume of any previous remarks and an appeal for the living of a clean life.

I availed myself in all my lectures of the use of lantern slide illustrations and, where I had the opportunity, of motion pictures. I found these visual aids of great value.

My audience consisted mainly of young men, sixteen to thirty years of age. I also had the opportunity to present the subject to older men, my object being not so much to influence their lives directly as to cause them to instruct their children along the lines of correct sex thinking. One group of my listeners was composed of young ladies, sixteen to twenty-five years of age, and their mothers.

The numerous questions asked, after the formal delivery of the subject, proved conclusively the intense interest entertained by the major portion of my audiences. At times I was kept one hour and even two, after my lecture, answering questions. Not one of these inquiries displayed any suggestion that they were actuated by salacious ideas. They were frank, earnest attempts upon the part of their proponents to secure information upon the sex problems which had particularly troubled them. It was undoubtedly true that some in the audience were attracted to the lecture by the possibility that they might hear something which would arouse erotic thoughts within them. These were disappointed. While it may not be said, with Goldsmith, that "Those who came to scoff, remained to pray," it is reasonably certain that those who

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came in the spirit of levity, had a better conception of the serious nature of the problem when they left. It was the opinion of the numerous critics in the audiences that the talks had nothing but a wholesome effect.

The questions were varied in their nature. A tabulation of some of them showed that they could be grouped under various headings. It may be of interest to state a few of the questions asked.

Some on reproduction and heredity were:

"What is the influence of cousin marriages?"

"Do mental factors influencing the mother effect the child she is carrying?"

"It has been said that the reason a child has a birthmark is because its mother, during her pregnancy, was frightened by seeing a mouse. Is there any truth to this statement?"

This question, like many others, revealed the many superstitions concerning gestation which exist in the minds of the laity.

"What determines the sex of the child?"

"How comes it that twins and triplets are born?"

"Is near-sightedness transmitted through heredity?"

Some of the questions on marriage were:

"Don't you think that a couple should be examined before getting married?"

"What causes sterility?"

"What is the ideal age for marriage?"

"What is the effect on sex feeling of alcohol—of tobacco?"

"Are pimples the result of continence?"

"Does masturbation cause insanity?"

"Is there such a thing as lost manhood?"

"Can syphilis be cured?"

"Has a man who has had gonorrhea the right to marry?"

"What is the Wassermann test?"

"What is meant by gleet?"

"Is it possible for gonorrhea to re-occur in an individual who has had it, and who has not exposed himself again?"

The numerous questions asked, the comments of individuals and groups to whom the subject was presented proved conclusively that there is a normal healthy demand for information on sex which should be met.

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SUMMARY OF VITAL STATISTICS FOR THE MONTH OF NOVEMBER, 1920.

There were 5,045 deaths reported during the month of November, 1920, with a death rate of 10 per 1,000 of the population, as compared with 4,857 deaths and a rate of 9.84 in the month of November, 1919—an increase in the abosolute number of deaths of 188 and in the death rate of .16 of a point. If comparison be made with the average number of deaths occurring in November in the years 1913 to 1917, inclusive, corrected to correspond with the increase in the population, the following results are shown:

A decrease in the deaths from all causes from 1,315 and in the following specific causes mentioned:

Typhoid fever	24
Measles	10
Whooping cough	6
Diphtheria	6
Tuberculosis of the lungs	297
Other forms of tuberculosis	40
Appendicitis	28
Organic heart disease	10
Respiratory diseases	369
Cirrhosis of the liver	28
Bright's disease and nephritis	200
Diarrhoeal diseases	38
Congenital debility and malformations	110
Violent deaths	8

The causes that showed an increased mortality were:

Scarlet fever	4
Cancer	41
Appendicitis	4
Homicides	6

Continuing the comparison, there were 298 less deaths among children under one year of age; 49 less between 1 and 2 years of age; between 2 and 5 years of age there was an increase of 81 deaths; 65 years of age and over, there was a decrease of 139 deaths. There were 171 deaths of non-residents reported during the month. There were 9,932 births reported, a slump of 968, as compared with the decennial average under consideration. On the other hand, there was an increase of 949 marriages.

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POPULATION, MARRIAGES, BIRTHS AND DEATHS, NOVEMBER, 1920.

Boroughs.	Population U. S. Census April 15, 1910.	Estimated Population July 1, 1920.	Certificates Received and Tabulated.			Rate per 1,000 Based on Department Estimate.			Corrected Death Rate. **	Corr'td Death Rate Correspon'g Month 1919.
			Marriages	B'ths	* D'ths	Marriages.	B'ths.	D'ths.		
Manhattan	2,331,542	2,829,239	3,110	4,281	2,296	13.38	18.42	9.88	9.53	9.58
The Bronx.	430,980	669,233	463	1,099	551	8.42	19.99	10.02	9.88	9.22
Brooklyn..	1,634,351	2,117,908	1,664	3,667	1,688	9.57	21.08	9.70	10.14	10.10
Queens....	284,041	419,506	254	713	360	7.37	20.69	10.45	11.61	10.37
Richmond.	85,969	105,559	77	172	150	8.88	19.84	17.30	14.07	13.74
N. Y. City.	4,766,883	6,141,445	5,568	9,932	5,045	11.04	19.69	10.00	.....	9.84

*Includes 171 deaths of non-residents of the city, which, if deducted, would give a death rate for the city of 9.66 per 1,000.

**Corrected by redistributing deaths according to borough of residence.

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REGISTERED MORTALITY FROM PRINCIPAL CAUSES.

NOVEMBER, 1920.

	Manhattan.		The Bronx.		Brooklyn.		Queens.		Richmond.		City of New York.	
	Nov.		Nov.		Nov.		Nov.		Nov.		Nov.	
	1920	1919	1920	1919	1920	1919	1920	1919	1920	1919	1920	1919
Total, all causes	2216	2187	543	489	1764	1718	400	346	122	117	5045	4857
1. Typhoid Fever	....	4	1	...	7	4	...	2	2	1	10	11
3. Malarial Fever	....	....	...	...	....	....	...	...	...	...	....	....
4. Typhus Fever	....	....	...	...	....	....	...	...	...	...	....	....
5. Measles	2	14	...	1	....	1	...	...	1	2	3	18
6. Scarlet Fever	7	1	1	2	5	....	1	...	...	...	14	3
7. Whooping Cough	10	4	1	1	8	3	....	2	...	...	19	10
8. Diphtheria and Croup	33	26	5	7	32	34	14	13	2	1	86	81
9. Influenza	9	8	2	3	7	11	4	5	...	1	22	28
10. Cholera Nostras	....	....	...	...	....	....	...	...	...	...	....	....
11. Poliomyelitis	1	2	...	...	6	....	1	...	...	...	8	2
12. Other Epidemic Diseases	....	8	1	2	4	2	1	...	...	...	6	12
13. Tuberculosis Pulmonalis	199	203	37	53	163	154	31	27	6	11	436	448
14. Tuberculous Meningitis	14	17	1	5	12	7	6	...	...	...	33	29
15. Other forms of Tuberculosis	14	15	1	3	5	10	2	3	...	1	22	32
16. Cancer, Malignant Tumor	202	207	59	52	161	154	34	34	10	6	466	453
17. Simple Meningitis	12	12	4	3	10	4	2	1	...	...	28	20
Of which												
17a. Cerebro Spinal Meningitis	3	5	3	...	4	2	2	...	...	...	12	7
18. Apoplexy and Softening of the Brain	33	28	9	7	9	23	1	4	2	2	54	64
19. Organic Heart Diseases	366	359	116	65	387	325	74	65	22	12	965	826
20. Acute Bronchitis	22	19	2	1	24	14	2	4	1	...	51	38
21. Chronic Bronchitis	2	5	...	1	4	7	1	...	...	...	7	13
22. Pneumonia (exc. Broncho Pneumonia)	110	106	28	27	85	85	19	17	5	3	247	238
22a. Broncho Pneumonia	104	100	28	24	73	65	24	15	1	4	230	208
23. Other Respiratory Diseases	16	9	4	2	9	11	1	3	1	3	31	28
24. Diseases of the Stomach (Cancer excepted)	21	13	3	11	10	4	5	3	1	1	40	32
25. Diarrhoeal Diseases (under 5 years)	61	57	7	9	58	56	15	6	5	3	146	131
26. Appendicitis Typhlitis	21	17	5	4	22	18	7	2	1	1	56	42
27. Hernia, Intest'l Obstruction	25	18	4	4	13	19	3	5	1	1	46	47
28. Cirrhosis of Liver	17	17	4	2	9	11	3	3	...	2	33	35
29. Bright's Disease and Nephritis	132	164	30	24	143	201	22	34	11	16	338	439
30. Diseases of Women (not Cancer)	18	15	4	3	6	8	3	4	...	...	31	30
31. Puerperal Septicaemia	4	4	2	4	3	6	...	...	...	...	9	14
32. Other Puerperal Diseases	15	25	8	4	15	11	2	3	1	...	41	43
33. Congenital Debility and Malformations	124	114	37	30	81	98	25	8	7	6	274	256
34. Old Age	9	14	2	4	2	8	1	4	...	...	14	30
35. Violent Deaths	188	153	31	18	106	103	23	12	15	10	363	296
a. Sunstroke	....	....	...	...	....	....	...	...	...	...	....	....
b. Other Accidents	165	142	31	18	101	100	22	12	14	9	333	281
c. Homicide	23	11	...	...	5	3	1	...	1	1	30	15
36. Suicide	31	25	4	7	19	7	6	6	2	3	62	48
37. All other causes	390	398	101	105	266	254	67	60	24	27	848	844
38. Ill-defined causes	4	6	1	1	....	....	...	1	1	...	6	8

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REGISTERED MORTALITY FROM ALL CAUSES AND CERTAIN INFECTIOUS DISEASES, BY WARDS, NOVEMBER, 1920.

BOROUGH OF MANHATTAN.

Wards.	Area in Acres.	Population U. S. Census 1910.	Number of Persons to the Acre.	Typhoid Fever.	Smallpox.	Measles.	Scarlet Fever.	Diphtheria and Croup.	Pulmonary Tuberculosis.	Lobar Pneumonia.	Broncho-Pneumonia.	Diarrhoeal Diseases.	All Causes.	Deaths of Children Under 5 Years.
1	154.0	9,750	63.0	..	..	..	..	..	3	2	1	1	23	5
2	81.0	933	11.5	..	..	..	..	..	..	..	..	..	3	..
3	95.0	1,915	20.2	..	..	..	..	..	..	..	..	..	3	1
4	83.0	21,336	257.1	..	..	..	..	..	1	..	2	..	22	6
5	168.0	5,666	33.7	..	..	..	..	..	..	..	..	..	4	1
6	86.0	19,670	228.7	..	..	..	..	..	6	1	1	..	17	2
7	198.0	102,101	515.6	..	..	..	..	1	5	5	2	2	57	13
8	183.0	33,182	181.4	..	..	..	..	..	3	2	..	2	29	9
9	322.0	64,909	201.6	..	..	..	..	..	5	1	6	1	55	9
10	110.0	66,439	604.0	..	..	..	..	1	..	1	2	2	31	10
11	196.0	136,548	696.7	..	..	..	1	..	5	3	2	3	69	17
12	6,154.0	806,648	131.1	..	..	1	..	14	55	36	46	22	858	168
13	107.0	64,651	604.3	..	..	..	..	1	3	1	3	..	36	8
14	96.0	38,321	399.3	..	..	..	1	2	4	3	4	3	33	13
15	198.0	30,584	154.5	..	..	..	..	..	5	2	1	..	26	3
16	349.0	55,926	160.2	..	..	..	..	1	4	8	2	2	65	10
17	331.0	172,334	520.6	..	..	1	1	3	15	8	1	4	124	31
18	450.0	62,821	139.6	..	..	..	..	1	9	..	3	3	85	17
19	1,481.0	292,950	197.7	..	..	..	3	5	26	12	10	9	284	52
20	444.0	73,308	165.1	..	..	..	..	..	6	5	3	3	69	16
21	411.0	62,345	151.7	..	..	..	..	..	11	1	5	4	85	17
22	1,529.0	209,154	136.8	..	..	..	1	4	33	19	10	7	238	50
Total....	13,226.0	2,331,491	176.3	..	..	2	7	33	199	110	104	68	2,216	458

BOROUGH OF BROOKLYN.

1	233.0	21,851	93.8	..	..	..	..	..	..	1	2	..	16	..
2	97.7	6,894	70.6	..	..	..	..	1	3	1	..	1	15	3
3	161.4	15,910	98.6	..	..	..	..	..	2	..	2	..	24	2
4	111.3	10,477	94.1	..	..	..	..	1	7	..	1	..	20	3
5	119.4	19,401	162.5	..	..	..	..	..	4	..	..	..	15	3
6	302.9	46,437	153.3	2	..	..	..	..	6	1	3	2	44	11
7	458.5	44,037	96.0	..	..	..	..	2	5	1	4	8	61	16
8	1,843.2	82,687	44.9	2	..	..	..	..	13	12	1	7	117	26
9	623.6	50,501	81.0	1	..	..	..	1	5	5	5	3	73	18
10	318.7	41,238	129.4	..	..	..	1	2	3	4	1	3	56	13
11	252.6	21,659	85.7	..	..	..	..	..	5	3	2	3	42	7
12	663.1	29,262	44.1	..	..	..	2	1	6	..	4	3	54	16
13	230.3	30,091	130.7	..	..	..	..	..	4	..	..	1	27	3
14	282.6	33,329	117.9	..	..	..	..	3	7	1	2	3	39	8
15	244.8	35,887	146.6	1	..	..	..	..	2	..	..	..	17	3
16	244.8	68,244	278.7	..	..	..	..	1	4	3	4	..	50	11
17	823.3	70,346	85.5	1	..	..	..	1	4	3	5	5	70	16
18	873.0	35,708	40.9	..	..	..	..	2	6	..	1	3	36	12
19	413.8	44,860	108.4	..	..	..	..	..	3	3	..	1	34	4
20	461.4	27,463	59.5	..	..	..	..	1	2	4	..	..	34	4
21	483.2	78,741	163.0	..	..	..	..	1	3	5	3	3	52	13
22	1,361.6	81,283	59.7	..	..	..	1	..	6	3	4	5	100	14
23	736.0	65,561	89.1	..	..	..	..	2	6	3	1	2	88	10
24	1,198.5	80,466	67.2	..	..	..	..	4	7	10	4	4	94	17
25	567.8	63,597	112.0	..	..	..	..	..	8	1	3	1	57	7
26	3,590.2	177,963	49.5	..	..	..	1	3	16	8	11	4	185	39
27	400.7	76,000	189.6	..	..	..	..	1	4	1	1	3	43	8
28	884.4	77,451	87.6	..	..	..	..	4	8	4	1	1	81	12
29	3,800.0	72,351	19.0	..	..	..	..	..	3	..	..	2	58	10
30	5,401.1	76,406	14.1	..	..	..	..	..	9	3	4	3	101	20
31	6,312.3	30,988	4.9	..	..	..	..	1	2	4	3	..	53	8
32	5,479.5	17,419	3.2	..	..	..	..	..	..	1	1	..	8	1
Total....	38,977.8	1,634,508	41.9	7	..	..	5	32	163	85	73	71	1,764	338

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BOROUGH OF THE BRONX.

Wards.	Area in Acres.	Population U. S. Census 1910.	Number of Persons to the Acre.	Typhoid Fever.	Smallpox.	Measles.	Scarlet Fever.	Diphtheria and Croup.	Pulmonary Tuberculosis.	Lobar Pneumonia.	Broncho-Pneumonia.	Diarrhoeal Diseases.	All Causes.	Deaths of Children Under 5 Years.
23	4,267.0	268,880	63.0	1	..	..	..	2	25	16	16	5	291	63
24	22,255.8	162,062	7.3	..	..	..	1	3	12	12	12	4	252	40
Total.	26,522.8	430,942	16.2	1	..	..	1	5	37	28	28	9	543	103

BOROUGH OF QUEENS.

1	4,650.0	61,763	13.3	..	..	..	..	4	5	3	8	2	76	11
2	14,700.0	105,219	7.2	..	..	..	..	2	12	2	6	7	118	26
3	22,000.0	37,171	1.7	..	..	..	1	4	1	7	3	..	59	12
4	36,600.0	67,412	1.8	..	..	..	..	4	12	3	7	5	126	31
5	3,770.0	12,476	3.3	..	..	..	..	..	1	4	..	3	21	7
Total.	81,720.0	284,041	3.5	..	..	..	1	14	31	19	24	17	400	87

BOROUGH OF RICHMOND.

1	3,340.0	27,201	8.1	..	..	1	..	..	1	1	1	2	43	14
2	4,130.0	16,871	4.1	1	..	..	..	..	1	..	..	1	17	3
3	10,050.0	*19,812	2.0	1	..	..	..	2	1	3	..	2	38	6
4	8,180.0	10,662	1.3	..	..	..	..	..	3	..	..	..	14	..
5	10,900.0	11,423	1.0	..	..	..	..	..	..	1	..	..	10	..
Total.	36,600.0	85,969	2.3	2	..	1	..	2	6	5	1	5	122	23

DEATHS ACCORDING TO AGE GROUPS, NOVEMBER, 1920.

Boroughs.	All Ages.	Under 1 Year.	1 Year and under 2.	Under 5 Years.	5-15 Years.	15-25 Years.	25-45 Years.	45-65 Years.	65 Years and over.	Colored.	Chinese.
Manhattan.	2,216	314	74	458	81	99	425	680	473	161	11
The Bronx..	543	80	12	103	31	25	75	158	151	1	..
Brooklyn...	1,764	226	47	338	83	103	299	507	434	50	..
Queens.....	400	64	9	87	18	17	60	112	106	7	..
Richmond..	122	16	2	23	6	6	23	26	38	2	..
City of N.Y.	5,045	700	144	1,009	219	250	882	1,483	1,202	221	11

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INFECTIOUS DISEASES.

Number of Cases Reported in the City of New York, by Boroughs, During November, 1920, and November, 1919.

	Manhattan.		The Bronx.		Brooklyn.		Queens.		Richmond.		City.	
	November.		November.		November.		November.		November.		November.	
	1920	1919	1920	1919	1920	1919	1920	1919	1920	1919	1920	1919
Typhoid Fever	25	57	6	10	46	26	12	7	3	6	92	106
Typhus Fever	....	1	....	....	....	....	....	....	....	....	....	1
Malaria	2	4	....	....	....	....	....	1	....	....	2	5
Small Pox	1	....	....	....	3	....	....	....	....	....	4	....
Measles	112	558	26	204	34	99	25	97	2	148	199	1106
Scarlet Fever	269	91	100	47	224	108	82	39	22	10	697	295
Whooping Cough	162	113	39	22	69	83	15	22	13	11	298	251
Diphtheria and Croup	529	346	214	135	511	405	227	145	54	31	1,535	1062
Leprosy	....	....	....	....	....	....	....	....	....	....	....	....
Mumps	56	100	12	13	38	83	5	4	2	22	113	172
German Measles	7	8	1	5	8	7	4	3	2	....	22	23
Chicken Pox	199	137	58	35	173	33	83	14	22	18	485	287
Glanders	....	....	....	....	....	....	....	....	....	....	....	....
Anthrax	....	2	....	....	....	1	....	....	....	....	....	3
Rabies	....	....	....	....	....	....	....	....	....	....	....	....
Tetanus	2	....	....	....	2	....	....	....	....	....	4	....
Pellagra	....	....	....	....	....	....	....	....	....	....	....	....
Pulmonary Tuberculosis	426	655	77	150	331	287	122	106	18	9	974	1,207
Other Tuberculous Diseases	....	....	....	....	....	....	....	....	....	....	....	....
Syphilis	1,016	2,000	87	223	467	945	29	78	10	23	1,609	3,269
Gonorrhoea	151	1,110	19	111	73	534	6	20	2	4	251	1,779
Cerebro-Spinal Meningitis	11	10	2	3	5	4	2	....	....	1	20	18
Poliomyelitis	8	3	5	2	14	2	1	....	1	....	29	7
Hookworm	....	....	....	....	....	....	....	....	....	....	....	....
Trichinosis	....	....	....	....	....	....	....	....	....	....	....	....
Influenza	63	183	21	30	25	57	4	14	1	1	114	285
Pneumonias	624	63	103	80	270	218	70	21	25	14	1092	396
Total	3,663	5,441	770	1,070	2,293	2,892	637	571	177	298	7,540	10,272

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MONTHLY METEOROLOGICAL SUMMARY.

NOVEMBER, 1920.

Date.	Temperature. (Degrees Fahrenheit.)				Relative Humidity. (Per Cent.)	Precipitation (Inches.)		Wind. (Miles per hour.)			Sunshine.
	Maximum.	Minimum.	Mean.	Departure of Mean from Normal.	8 a.m.	Rain.	Snow.	Average Velocity.	Prevailing Direction.	Maximum Velocity and Direction.	Number of Hours.
M 1	67	48	58	+ 9	58	0	0	17.1	W	32 W	6.8
T 2	62	46	54	+ 5	82	.62	0	31.7	S	58 SW	1.9
W 3	57	43	50	+ 2	56	.01	0	23.7	NW	42 NW	9.9
T 4	58	42	50	+ 2	73	0	0	17.0	NW	34 SW	9.4
F 5	60	43	52	+ 4	51	0	0	23.5	NW	38 W	10.2
S 6	57	44	50	+ 2	61	0	0	18.3	NW	30 NW	9.8
S 7	51	44	48	+ 1	64	.11	0	6.4	E	15 N	1.8
M 8	53	43	48	+ 1	89	.02	0	8.1	SW-NW	17 NW	3.6
T 9	61	46	54	+ 8	83	T	0	23.0	SW	38 SW	0.3
W 10	58	40	49	+ 3	62	0	0	23.5	NW	38 NW	4.2
T 11	47	39	43	— 3	54	T	0	8.8	E	16 E	2.7
F 12	44	27	36	— 9	81	0	0	27.0	NW	59 NW	8.1
S 13	42	25	34	—11	46	0	0	18.4	NW	30 NW	10.0
S 14	41	29	35	—10	48	0	0	12.7	SW	23 W	9.9
M 15	40	33	36	— 8	56	.02	T	7.4	NW	17 NW	0
T 16	41	36	38	— 6	74	1.17	0	17.6	NE	32 NE	0
W 17	53	36	44	+ 1	99	.56	0	40.1	SW	70 NW	0
T 18	52	38	45	+ 2	63	0	0	22.1	NW	66 NW	9.2
F 19	51	35	43	0	67	0	0	17.8	W	33 NW	7.2
S 20	53	43	48	+ 6	67	T	0	12.0	NW	19 NW	2.3
S 21	47	41	44	+ 2	81	0	0	14.9	E	21 E	0
M 22	47	40	44	+ 2	87	.33	0	19.7	E	37 E	0
T 23	47	38	42	+ 1	91	.68	0	22.8	NW	46 N	0
W 24	46	35	40	— 1	68	T	T	19.0	NW	31 NW	0
T 25	40	32	36	— 4	86	T	T	15.0	NW	26 NW	0
F 26	45	35	40	0	69	0	0	20.3	NW	34 NW	5.2
S 27	43	39	41	+ 1	66	.04	0	9.6	S	20 NW	0
S 28	45	36	40	+ 1	91	T	0	13.3	NE	27 NE	0
M 29	42	34	38	— 1	69	0	0	11.9	NE	31 NE	3.6
T 30	49	38	44	+ 5	75	0	0	4.8	S	14 NE	0
.....	....	....	....	....	....	.....	.....	....	.....	.....	.....
Month	Mean 50.0	Mean 38.3	Mean 44.2	Blank	Mean 70	Total 3.56	Total T	Mean 17.6	Prev'l'g NW	Blank	Total 116.1
Normal	51.1	37.7	44.0	Blank	75	3.44	1.2	13.1	NW	Blank	Possible 297.0

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6.	241 East 40th St.	13.	508 West 47th St.	20.	197 Hester St.	27.	95 Forsyth St.
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3.	208 Hoyt St.	9.	76 Johnson Ave.	15.	296 Bushwick Ave.	21.	167 Hopkins St.
4.	144 Navy St.	10.	233 Suydam St.	16.	994 Flushing Ave.	22.	592 Park Ave.
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Queens—Patients attend Brooklyn or Manhattan Clinic.

Richmond—Patients attend Manhattan Clinic.

On Sundays and holidays patients of all Boroughs attend Brooklyn Clinics. Hours on these days. 10 a. m. to 12 noon.

Immunization against typhoid fever will be given on request at these clinics.

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Brooklyn—Fleet and Willoughby Streets. Week days, 2 to 4 p. m. Telephone, Main, 4720.

Queens—Jamaica, 372-374 Fulton Street, Jamaica, 2 to 4 p. m.; Saturday, 9 to 12 noon. Telephone 1200 Jamaica.

Corona, 127 46th Street (near Alburtis Avenue "L" Station), 2 to 4 p. m.; Saturday, 9 to 12 noon. Telephone, 3255 Newtown.

Ridgewood, 753 Onderdonk Avenue, Ridgewood, 2 to 4 p. m.; Saturday, 9 to 12 noon. Telephone, 3624 Evergreen.

Queens Plaza, 138 Hunter Avenue. Telephone, 2589 Astoria.

Richmond—Richmond Bay and Elizabeth Street, Stapleton, 2 to 4 p. m.; Saturday, 9 to 12 noon Telephone, 1558 Tompkinsville.

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Jefferson, 341 Pleasant Avenue. Telephone, 2375 and 828 Harlem.
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Washington, 130 Prince Street. Telephone, 9586 Spring.
Day Camp, Ferryboat "Manhattan," foot East 90th Street. Telephone, 1581 Lenox.

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Brownsville, 64 Pennsylvania Avenue. Telephone, 2732 East New York.
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Day Camp, Ferryboat "Rutherford," foot of Broadway. Telephone, Williamsburg, 5223.

Queens—Jamaica, 372-374 Fulton Street, Jamaica. Telephone, 1200 Jamaica.
Corona, 127 46th Street (near Alburtis Avenue "L" Station). Telephone, 3255 Newtown.
Ridgewood, 753 Onderdonk Avenue, Ridgewood. Telephone, 3624 Evergreen.
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